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NEWS SUMMARY

GENERAL

UN may send Namibia force

UN Security Council will meet today to consider a proposal by Dr. Kurt Waldheim, secretary general, that 7,500 troops should be sent to assist Namibia — formerly South West Africa — in its bid for independence.

In a written report to the council, Dr. Waldheim proposes the despatch of troops, plus 1,200 civilian officials and 360 civilian police. Their job would be to maintain law and order and arrange elections.

The move would be the largest by the UN since it became involved in the Congo in the 1960s. Back Page

Vaccine queue

Thousands of people flocked to vaccination centres in Birmingham as police continued their search for two holidaymakers who have been in contact with Mrs. Janet Parker, the smallpox victim.

Sithole adamant

Rev. Ndabaningi Sithole, one of the three black members of Rhodesia's executive council, said in Salisbury he was against fresh all-party talks and asserted his view that one man, one vote elections must go ahead by the end of the year as part of the internal settlement. Page 4

Trial by U.S.

An East German who hijacked a Polish airliner to Tempelhof, West Berlin, faces trial by an American military court because Tempelhof is a U.S. base. The hijacker surrendered and no one was hurt. Page 2

Korchnoi move

Challenger Viktor Korchnoi, 1—4 down in the world chess championships, has threatened to pull out unless a one-way mirror is installed between players and spectators to block the alleged influence of a psychologist working for Anotoly Karpov, the champion.

Midnight excess

Distributors of the film Midnight Express, set in a Turkish jail, have agreed to cut from the Dutch version a scene in which Turkey is abused. The move follows protests from Holland's 00,000-strong Turkish community.

'ope's promise

pe John Paul, speaking to the llege of Cardinals, admitted he inexperienced in central ch government and promised *collaboration with his* nals. But he gave no clue future policy.

.tonehouse plea

The daughter of former MP John Stonehouse, returned to jail on Tuesday after hospital treatment, said that jail would kill her father. "I don't think he'll be able to take the mental strain," said Jane Stonehouse, 29.

The long wait

Long-haul flights out of London Heathrow faced delays up to nine hours as the effects of the French air traffic controllers' dispute continued. One flight for Corfu finally left Glasgow after a 25-hour delay.

Briefly . . .

UK residents originating in the New Commonwealth and Pakistan numbered 1.85m in mid-1977, an *increase of 76,000 on the* previous year.

Baroness Tweedsmuir, who died in March, left £169,358 gross (£167,367 net).

A group of doctors says transcendental meditation should be available on the National Health.

Murder hunt began as fire which killed two men in Tottenham, London, was found to be arson.

BUSINESS

Equities slip 2.8; gold index up 8

● EQUITIES attempted a small rally before extending Tuesday's downturn. *FT 30-share index*, up 0.8 earlier, finished 2.8 down at 503.0. Gold Mines Index rose 8.0 to 181.6 *on a sharp recovery* in gold shares following rises in New York.

● GILTS shorts lost to ¼, due to upward pressure on U.S. *interest rates. Government* Securities Index edged 0.21 lower to 70.42.

● GOLD rose \$1¾ to \$206⅞.

August settlement price closed at 206.90 (207.20).

● STERLING fell 45 points to \$1.9410. Trade-weighted index was unchanged at 62.4. Dollar's depreciation was 9.2 (8.9) per cent.

● WALL STREET closed up 0.52 at 880.72.

● TEXAS INSTRUMENTS, the U.S. multinational semiconductor company, plans to set up a new plant in Europe. *Central Scotland* and the Irish Republic are at present the most favoured areas.
Back Page

Britain agrees to join Airbus consortium

● BRITAIN has agreed in principle to join the European Airbus consortium with France and Germany, but Industry Secretary Eric Varley is understood to be unwilling to force British Airways to buy the new A310 Airbus as an entry condition.
Back Page; FT aerospace conference Page 5

● ITT, the U.S.-based multi-*national, is to undertake a £5m* investment programme at its semiconductor plant at Footscray, *South-east London.*
Page 5

● MINERS' leaders are to resist efforts by the TUC to stop their attacking the social contract at next week's Trades Union Con*gress in Brighton*. The Government is facing the first public sector challenge to its Phase *Four guidelines from* 9,000 atomic power workers in State-owned concerns whose pay claim includes 20 per cent rises for some grades. Page 10

● BURMAH OIL is selling all its remaining oil and gas exploration and production interests in Australia, in a deal worth about *£20.8m, to a group headed by* Bond Corporation Holdings and Endeavour Resources.
Back Page

● FLUOR, the U.S. engineering group, has taken the 237,000 sq ft of available space in British Rail's £32m Euston Square development in the biggest central London office letting for many years.
Back and Page 6

COMPANIES

● BTR INDUSTRIES is to raise *£24.1m by a 1-for-7 rights issue* at 285p a share. Page 33 and Lex

● BOC pre-tax profits fell to £48.8m (£60.4m) on group sales of £917m (£499.1m) for the nine months to June 30.
Page 33 and Lex

● PEARL Assurance general branch first-half taxable loss increased to £1.17m (£220,000). Exceptional growth occurred in ordinary branch new premiums.

CHIEF PRICE CHANGES YESTERDAY

(Prices in pence unless otherwise indicated)

RISES

BOC Intnl.	61	+ 2
BTR	340	+ 7
Cement-Roadstone	104	+ 5
Farmer (S. W.)	147	+ 7
Gripperrods	68	+ 5
Haggas (J.)	117	+ 7
Haw Par	73	+ 5
Mowat (Wm.)	27	+ 5
Travis and Arnold	176	+ 7
Siebens (UK)	382	+ 24
De Beers Dfd.	415	+ 7
Pres. Steyn	937	+ 79
Vaal Reefs	£15¼	+ 1
West Drie	£24¾	+ 1½
Western Deep	881	+ 70
Winkelhaak	744	+ 54

FALLS

Treas. 8½pc 1982	£90½	— ¼
Excheq. 12pc '99-02 (£35 pd.)	£54¼	— ¼
Akroyd and Smithers	218	— 8
Blue Circle	289	— 5
Bourne Hollingsworth	273	— 7
Burton A	169	— 8
Cableform	72	— 4
Cullens A	142	— 8
General Accident	226	— 6
Grovebell	26	— 4
House of Fraser	162	— 4
Mothercare	158	— 4
Pearl Assnce.	252	— 12
Racal Electronics	316	— 10
Rank Org.	260	— 10
Slough Estates	119	— 7
Sun Alliance	566	— 10
Tarmac	162	— 6
Guthrie Corp.	370	— 10
Central Pacific	475	— 75
Southern Pacific	195	— 10

International union bid to save jobs at Chrysler

BY ALAN PIKE IN GENEVA

Trade union leaders from several countries yesterday pledged themselves to international pressure—"including industrial action"—if the proposed Peugeot-Citroen takeover of Chrysler's European operations results in loss of jobs.

The International Metalworkers Federation decided to embark *on an unprecedented* campaign to protect workers from the effects of a cross-border company takeover.

Union leaders see the ramification of the Chrysler decision to pull out of Europe and the Peugeot-Citroen offer as an important test of their ability to influence the activities of multi*national companies.*

The federation last night sent telegrams to Peugeot Citroen and *Chrysler managements demand*ing an early meeting. They also intend to ask the EEC Commission to investigate the implications of the proposed takeover which, they fear, would increase capital concentration and restrict the consumer's choice.

In a declaration after the meeting the union leaders said that it was "intolerable that a multinational company such as Chrysler, deeply in debt to its host Government in the UK, should be allowed to evade its economic and social responsibilities to workers by selling out and running away."

It was also unacceptable that *Peugeot-Citroen, which occupied* a key position in the French economy, should be allowed to *"pursue market strategies in the* sole interest of maximum profit without accounting for employ*ment objectives throughout the* whole group."

Determined

Peugeot-Citroen directors will announce their detailed plans for the Chrysler takeover in Paris today against a background of trade union determination to ensure that they are not accomplished at the cost of potentially vulnerable plants like the one in Linwood, Scotland.

Mr. Herman Redhan, secretary *general of the Metalworkers* Federation which represents unions with more than 13m members, said after the meeting that Peugeot-Citroen would no doubt say that "the sun will be *shining over the company for* 365 days a year and that not one *of the workers' hairs will be touched."*

The unions, however, were sceptical as experience of pre*vious mergers showed how easily* employees could be made the victims of rationalisation.

The unions are demanding that, before considering giving approval to the takeover, the British, French and Spanish Governments must not only secure guarantees that jobs will be safeguarded but ensure "by *use of fiscal and taxation* measures if necessary" that some plants do not become mere *assembly sites.*

Strong fears were expressed that without strict guarantees to the contrary, Chrysler plants in Britain and Spain might be reduced to assembling cars from kits engineered in France.

The Continental unions gave strong support to the Amalgamated Union of Engineering *Workers' demands for direct* Government representation in any company which takes over Chrysler UK.

Defensive

"We strongly suggest to the British Government that it will have been duped by Chrysler unless it acquires equity shares and receives representation on the Peugeot-Citroen Board of directors."

Mr. Terry Duffy, AUEW president-elect, said that union leaders at yesterday's meeting had set up a defensive structure. The unions were not adopting an attacking role but had to warn that "rationalisation undoubtedly will mean collision."

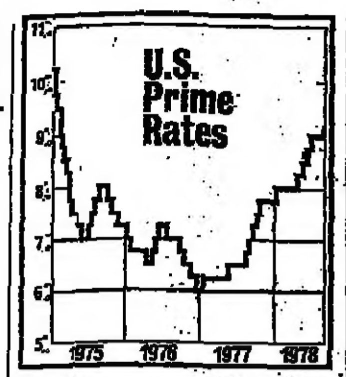
There are about 250,000 people employed by Chrysler and Peugeot-Citroen in Europe and *the federation yesterday* appealed to them for support to construct a "vast network of tangible and effective labour solidarity."

Union leaders made it clear that if they have to take industrial action to prevent redundancies in Europe they will look to Chrysler's employees in the U.S. for support.

British union leaders were keen to stress that the U.K. Government was *still in a posi*tion to veto the Peugeot-Citroeon offer which, they believe, puts it *in a strong position to demand* the guarantees which the metal workers are seeking.

The metalworkers' federation is an international co-ordinating body for unions in the engineering and related industries. Its strength in the French Chrysler and Peugeot-Citroen factories does not compare with the 100 per cent organisation of manual workers which the British unions have achieved and it is ques*tionable how effective the* French union leaders would be in demanding industrial action *in support of Chrysler UK* workers getting work which would otherwise be done in France.

Lucas urges link, Page 2



Prime rates up ¼% in U.S.

BY JOHN WYLES

NEW YORK, August 30.

THE GENERAL cost of borrowing in the U.S. was rising to the highest level since February 1975 today when several prominent banks increased their prime lending rates from 9 per cent to 9¼ per cent.

The move was triggered by Chase Manhattan Bank this morning and was not unexpected in view of the increase in the banks' costs of obtaining funds since the last prime-rate increase on June 30.

Since then, the economy's most important short-term interest rate on uncommitted bank *reserves — the Fed funds rate*— has risen in several stages from 7¾ per cent to 8⅛ per cent last Monday.

Several important regional banks followed Chase Manhattan's lead, as did Chemical Bank of New York. Citibank, the nations second largest, may follow suit on Friday morning.

Initially, news of the interest-rate rise was poorly received in the stock market, which looked set to record its third consecutive daily decline. However, the market rallied in mid session *after a Government report that* new factory orders declined 3.8 per cent in July, and closed narrowly higher. On the *foreign* exchange market, the dollar had a better day than expected.

The malaise of the dollar, with a 'larger-than-expected' growth in the money supply during August, is thought likely to keep pushing up U.S. interest rates. Some economists forecast a 10 per cent banking prime rate by early next year

Mr. Henry Wallich, a member of the Federal Reserve *Board, acknowledged today that* fiscal and monetary policy had failed to reduce the U.S. inflation rate, which was now "in the 8 per cent area." He gave warning that inflation would continue to accelerate unless further action was taken and he returned to his advocacy of a tax-based policy to offer incentives to labour and management to curb wage and price increases.

He admitted that such a policy would be difficult to administer

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\$ in New York

—	Aug. 30	Previous
Spot	\$1.9380-9390	\$1.9445-9455
1 month	0.53-0.47 dis	0.35-0.29 dis
3 months	1.24-1.18 dis	1.22-1.16 dis
12 months	4.55-4.45 dis	4.40-4.20 dis

China and Hong Kong in joint property deal

BY ANTHONY ROWLEY

HONG KONG, August 30.

CHINA is to be the majority *partner in a joint property* development venture in the New Territories of Hong Kong, worth more than £100m.

The deal, which involves the Hong Kong Land Company and Jardine, Matheson and Co., is the latest, and in some ways the most significant, of a series of *capitalist ventures in which* China has become involved here recently.

Because the deal is long-term, it is seen as an indication that Peking is ready to see Hong Kong remain as a British colony well past the expiry date of Britain's lease on the colony, *which expires in 1997.*

China's interest in the new venture will be through two companies, the *Kiu Kwong* Investment Corporation and the Sun company.

The deal appears to establish an operative framework for co-operation between two of the colony's biggest expatriate companies and corporate interests controlled from China, which might be used in future developments inside China.

Hotel and tourist development in China is one suggested area. The development follows the recent visit to Peking of Mr. David Newbigging, who is chairman of both Hongkong Land and Jardine.

The quadripartite joint venture, established with the approval of the Mass Transit Railway Corporation here, will develop and sell Luk Yeung Sun Chuen, the township to be built on the podium above the Mass Transit Railway depot in Tsuen Wan, in the New Territories.

The 99-year Crown lease on the New Territories which Britain signed with the Imperial Chinese Government in 1898 is due to expire in 1997, and while Peking claims not to recognise the agreement entered into by a former regime the expiry date has legal significance for the grant of *leases for development purposes* here.

Schools

The development will be the first in the New Territories in which Hong Kong Land has been involved. Luk Yeung Sun Chuen will comprise approximately 5,400 *sq metres of commercial space.*

The complex will include two schools, a cinema and parking, with additional commercial and community facilities to be retained by the Mass Transit Railway Corporation.

The developed value of the complex is expected to be between HK\$1bn and HK\$1.5bn.

Building is forecast to begin in 1981, with completion in 1983.

Hong Kong Land and Jardine Matheson will be minority partners in the venture, it is believed with 5 per cent each, while Kiu Kwong, which is a Peoples Republic of China-controlled company incorporated in Hong Kong, and Sun Company, which has "close ties" with China and *is* also Hong Kong-incorporated, will be the majority partners.

The precise form of corporate vehicle to undertake the development has not yet been defined, *but a Mass Transit Railway* spokesman said that profit-sharing between the corporation and the developers was likely to be in 50-50.

The Bank of China and Nanyang Commercial Bank, both China-controlled entities, are to provide 100 per cent financial guarantees for Sun Company and Kiu Kwong.

The development contract is likely to be a "multi-hundred-million-dollar" project.

It was first announced in June that China, through her commercial vehicle, Kiu Kwong Investment Corporation, was participating in a joint venture with the Sun Company to develop 4,000 flats at the Mass Transit Railway Corporation Tsuen Wan depot in 1981.

U.S. steel groups protest at imports from EEC

BY JOHN WYLES

NEW YORK, August 30.

A SUBSTANTIAL *increase in* EEC steel exports to the U.S., in July brought a crescendo of pro*tests from U.S. steel companies* today, and a warning from the U.S. Treasury of possible anti-dumping complaints.

Steel imports to the U.S. in July jumped 31 per cent over the June total, largely, according to the U.S. Treasury, because of a 72 per cent leap in EEC shipments.

This prompted the chorus of complaints from U.S. producers, who doubted the effectiveness of the trigger-price mechanism which the Treasury acknowledged might be weakening because of the appreciation of the yen against the dollar.

Under the trigger-price system, *steel importers charging prices* below a certain level face a specially speeded-up anti-dumping investigation.

Trigger prices are based on Japanese costs of production, which have been judged to be the lowest and most efficient. Treasury officials now doubt whether this continues to be so in dollar terms, following the precipitous fall of the dollar against the yen.

Consequent adjustments in trigger prices this year appear to be making it easier for less efficient foreign producers to sell into the U.S. market below domestic U.S. prices, but above trigger prices.

As a result the Treasury is considering whether to change the basis for calculating trigger prices, either by focusing on another low-cost producer or by introducing a two-tier system with a set of prices applying specifically to European steel.

Mr. Peter Ehrenhaft, a Deputy Assistant Secretary at the Treasury, said today that while European producers were selling above trigger *prices in the U.S.*, many did not appear to be selling at fair value

"This might make them vulnerable to anti-dumping suits from domestic steel companies," he said.

Mr. Harry Holiday, president of Armco, said today that his company wanted to go on honouring the Administration's wishes to avoid using anti-dumping laws at this time, but it was telling the hWite House that some action should betaken.

Republic Steel was more *emphatic in saying that the* latest import figures "revive the need for us to take appropriate legal actions under the existing trade laws."

The trigger-price system was supposed to remove the need for anti-dumping complaints by *the* industry because *of its promise of faster investigations of cheap* imported steel. A resurgence *of* anti-dumping suits would tend, in most people's view, to make the system irrelevant.

Although imports now look likely to take substantially more than *the 14 per cent of the U.S.* market which was expected when the trigger-price system was *introduced at the start of the* year, the Treasury is not yet disposed to conclude that the *mechanism has failed.*

Mr. Ehrenhaft stressed that U.S. company shipments and profits were well up on last year, and that inventories did not appear to be reaching unduly high levels.

Moreover, the Administration had not committed itself to reducing imports to precise levels, but was more concerned to prevent injury to the domestic industry through unfair pricing.

U.S. bank 'critical of BCCI'

BY DAVID LASCELLES

NEW YORK, August 30.

EVIDENCE THAT Bank of America, a major shareholder in the London-based Bank of Credit and Commerce International, was critical of BCCI's management and loan policies—including loan loss provisions—*has been presented to a U.S.* court.

This provides a new clue to Bank of America's reasons for its decision announced previously to reduce and eventually sell off its BCCI shareholding.

The evidence comes in an affadavit filed with the district court in Washington by Mr. Douglas Kraus, a lawyer acting for Financial General Bankshares, the bank holding *company which is trying to fight* off a takeover by BCCI.

The affadavit supports *Financial General's attempt to* wrest from Bank of America a credit report it prepared on BCCI Holdings (Luxembourg) SA, the parent company, last autumn which it expects will support its case that BCCI is not competent to run an American bank.

Mr. Kraus says in his affadavit that he was shown a summary of this report at a meeting with Bank of America in London earlier this month.

But the bank refused to let him have a copy on the grounds that it contained confidential infor*mation.*

However, Mr. Kraus saw it for long enough to retain its main *points, which he lists in his* affadavit as follows:

● BCCI's loan loss reserves of *approximately \$3m (£1.54m)* were inadequate. These should be increased by almost six times to \$17m.

● *BCCI had engaged in the* practice of making substantial "insider" loans.

● BCCI's real estate loan portfolio was "unsatisfactory." A Bank of America official told Mr. *Kraus that "the amount of BCCI's* real estate loans in the Gulf was fairly high, and the market is not exciting there."

As a result, Bank of America "had installed a policy" requiring that the Board of directors review real estate loans more than \$2.5m and approve real estate loans in excess of \$5m.

Mr. Kraus says that all these comments were underlined in

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For latest Share Index 'phone 01-246 8026

EUROPEAN NEWS

U.S. court will try Tempelhof hijacker

By Leslie Collit

BERLIN, August 30.

AN EAST GERMAN who hijacked a Polish airliner to West Berlin's Tempelhof Airport today faces trial by a U.S. court in Berlin. Tempelhof is a U.S. Air Force bas ein the American sector of the city.

The hijacker is likely to be given a stiff prison sentence, as the U.S. has long been advocating tough international measures against the offence. The U.S. and six other Western countries agreed on joint action last month against any country that harboured hijackers by failing to extradite or prosecute them. Nevertheless, the American authorities will not retunr the hijacker to East Germany.

In 1969 a French court in West Berlin tried two East Germans who hijacked a Polish airliner to the city, and a British court tried a West Berliner who shot a Soviet guard at the Russian war memorial in West Berlin.

West German officials are relieved that the aircraft involved in the latest incident landed in Allied-controlled West Berlin and not West Germany. The Bonn Government has come under heavy criticism from Czechoslovakia for refusing to extradite Czech citizens who hijacked airliners to West Germany.

The hijacked Soviet-built TU-134 of Polish Airlines took off from Warsaw and after a stop at Gdansk on the Baltic was due at Shoenefeld Airport, just outside East Berlin. Instead it landed an hour later at Tempelhof.

The hijacker, whose name is being withheld by the U.S. authorities, is said to be in his thirties. He drew a pistol and threatened to kill a stewardess unless the pilot changed course to Tempelhof.

The man was first off the plane when it landed, together with a young woman and a child. He handed his pistol to waiting police. Seven other East Germans have chosen to stay in West Berlin, and are being housed at a refugee camp. The remainder of the passengers, mostly East Germans, have been returned to East Berlin.

Reuter adds from Stockholm: A Croatian nationalist lawyer sought by Yugoslavia on terrorism charges has fled West Germany and asked for political asylum in Sweden. Mr. Damir Petric, aged 29, is one of eight Croatians whose extradition from West Germany was requested by Belgrade after Yugoslav police seized four suspected West German urban guerrillas earlier this year.

In an interview with a Swedish newspaper today Petric said he was vice-chairman of the Croatian student organisation. He dismissed Yugoslav allegations of criminal activities as absurd.

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DUCELLIER TAKEOVER BID

Lucas urges link with Peugeot-Chrysler deal

BY DAVID CURRY

PARIS, August 30.

THE LUCAS motor component concern has seized on the proposed takeover of the European interests of Chrysler by the Peugeot-Citroen group to press the French Government to authorise its seven-month-old project to acquire the 51 per cent stake it does not already own in the French component maker Ducellier.

While the British Government has given no promise that it will establish a definite link between the Peugeot-Citroen takeover of Chrysler's UK business and Lucas' attempt to purchase the whole of Ducellier, it is quite clear that Whitehall is fully aware of the French delay in replying to Lucas' request.

Indeed, the UK Government is understood to have privately urged Lucas either to push through an agreement with rival French interests over the fate of Ducellier or make a public statement that the negotiations have reached impasse.

It will then be in a position to judge what weight it should give the affair in assessing its own attitude to the Peugeot-Citroen agreement with Chrysler.

British officials have already raised the Lucas problem with their opposite numbers in the Anglo-French industrial co-operation committee set up after the Giscard d'Estaing-Callaghan summit meeting last December.

Lucas' French company is seeking to buy from the Bendix Corporation's subsidiary, DBA, the 51 per cent it owns in Ducellier for $26m (£13.4m). Lucas already owns 49 per cent of the French concern.

This move is opposed by the French group SEV, which is itself owned 70 per cent by the French component concern Ferodo and 30 per cent by the West German concern Bosch.

SEV brings together a number of ailing French component makers under the tutelage of Ferodo as part of the French Government's efforts to create a French component industry of international dimensions. Ferodo fears that if Ducellier goes to Lucas it will become the man in the middle between he two big European groups of Lucas and Bosch.

In an attempt to reach a compromise with Ferrodo, Lucas has already made a series of concessions. These are:

- An offer to split the Bendix stake in Ducellier 50:50 with Ferodo.
- Joint Lucas/Ferodo commercial operations in certain markets.
- A promise to limit the Ducellier-Lucas market share in starter motors and alternators to the 1976-77 level for three or four years.
- Making Lucas' world-wide service network available to SEV.
- Establishment of joint subsidiary with Ferodo/SEV in Spain to compete with Bosch.
- Establishment of a joint electrical components concern with Ferodo/SEV in France.

Ferodo itself is apparently insisting that it should control 50 per cent of Ducellier, but Lucas describes its willingness to concede only a 25½ per cent stake as the maximum to which it is prepared to go.

Lucas insists that the acquisition of Ducellier is vital to its plans to develop a second major source of supply in France. It claims that the French motor industry favours its bid because it itself needs more than one source of supply. Otherwise, according to Lucas, it would be obliged by common prudence to seek an outside manufacturer to fulfil this role.

In support of its case, Lucas argues that its takeover of Ducellier would rationalise the French market, increase employment (it notes cannily that it has created substantial employment in Giscard d'Estaing's home parish in the Auvergne) and develop French exports.

The British company is in a difficult situation. In the interests of peace and harmony, it would like the French Government to accept its case without the application of obvious British pressure. But at the same time it is campaigning hard to persuade British ministers to treat the Peugeot-Citreon and the Lucas-Ducellier deal as parallel cases, even though it points out that Ducellier has had none of the public subsidy Chrysler UK has received and represents a much smaller British acquisition in France than Peugeot-Citroen takeover in the UK.

On the other hand, observers feel that if the British Government obtains the probable promises from the French group to assume Chrysler's commitments in the UK, including employment, it may be reluctant to bring Ducellier into the discussion.

Pay, prices and profits frozen in Denmark

BY HILARY BARNES

COPENHAGEN, August 30.

PRIME MINISTER Anker Joergensen has announced that his new coalition government of Social Democrats and Liberals will put up the value added tax from 18 per cent to 20 per cent and will impose immediately a six-months' freeze on prices, wages and profit margins.

He also today presented his Cabinet of 14 Social Democrats and seven Liberals to Queen Ingrid, the Queen Mother, who was acting on behalf of Queen Margrete, currently visiting Greenland.

Mr. Henning Christoffersen (38), the Liberal leader and an economist with no experience of foreign affairs, becomes Foreign Minister. Other leading Liberals in the Cabinet include Mr. Anders Andersen as Minister for the Economy and Taxation, Mr. Arne Christiansen, chairman of the powerful parliamentary Market Affairs Committee, as Minister of Commerce, and Mr. Niels Anker Kofoed as Minister of Agriculture.

The Social Democrats retain Mr. Knud Heinesen as Minister of Finance, and Mr. Poul Soegaard as Minister of Defence. No changes are planned in either defence or foreign policy as a result of the formation of the new coalition.

At a news conference this afternoon, the Prime Minister stressed the contribution which the coalition can make to political stability, against the background of a Parliament in which there are 11 parties and no natural majority on either the Left or the Right. He stated that an imporved economic balance was the main aim of the new Government, which has the backing of 88 members of the Folketing (parliament), one short of a majority.

The combination of increased VAT and reduced government spending planned by the coalition is expected to bring down the current balance of payments deficit to a maximum of DKr 6.5bn (about £610m) next year, said Mr. Joergensen, compared with a forecast deficit this year of DKr 7.5bn and DKr 10bn in 1977.

A central role will be played by the government policies for reducing the rate of wage inflation. The Prime Minister said that the coalition will call tripartite discussions on wages and incomes prior to the renewal next spring of the two-year collective wage agreements, but he did not spell out any of the more specific measures the Government may use to make wage restraints stick.

Mr. Joergensen confirmed that plans to build a bridge across the Great Belt entrance to the Baltic will be dropped, but said that construction of a distribution network for Danish North Sea natural gas will go ahead.

Dutch warned of need for spending cuts

By Charles Batchelor

AMSTERDAM, August 30.

DUTCH EMPLOYERS' organisations have warned of the dangers of the rejection by trade unions of Government plans for spending cuts.

Unemployment will double to 400,000 by 1981 if the cuts are not carried out, Mr. Chris Van Veen, leader of the Confederation of Dutch Industry (VNO) said. The Christian Employers' Confederation (NCW) warned that delays in implementing the programme would only make a solution more difficult.

The precarious situation of much of Dutch industry means that many companies will have difficulty surviving even if the Fls. 10bn (£2.4bn) of cuts are carried out in full, Mr. Van Veen said.

The Christian employers criticised the unions for ignoring the enormous economic problems facing Holland. The unions themselves have put forward no alternative solution, the NCW said.

Commenting on the unions' rejection of the plan to restrict the rise in public sector salaries and social security benefits, the NCW said that without curbs these salaries and benefits would rise more quickly than the average industrial wage. Nor will Government plans reduce public sector jobs, the employers argued; they will merely restrict their growth, which would otherwise be at the expense of jobs in private industry.

In an address to the Metal and Electrical Engineering Industries' Association, Mr. Gijs *Van Aardenne, the Economics* Minister, said that support for narrow sectoral and short-term interests would harm efforts to achieve economic recovery.

Mauritanian minister in Madrid

BY ROBERT GRAHAM

MADRID, August 30.

THE MAURITANIAN Foreign Minister, Mr. Ould Mohammed Laghdaf, begins a three-day visit here today as part of the new Mauritanian Government's efforts to achieve an end to the conflict in the former Spanish Sahara.

The visit completes the round of formal and informal discussions on the future of the former Spanish colony that the Mauritanian Government initiated a month ago with all the major parties connected with the issue. This initiatvie, which has been encouraged by France and well received by Algeria, has come up against strong resistance from Morocco.

As a means of breaking the deadlock and preventing further clashes between the Algerian-backed Polisario indpendence movement and Moroccan and Mauritanian forces, the Mauritanians tentatively suggested an initial compromise whereby Polisario be allowed to control that part of the former Spanish colony at present in Mauritanian hands.

At the same time, President Houphouet Boigny of Ivory Coast has been attempting to act as mediator, promoting the idea of a summit between the countries directly involved in the conflict — Algeria, Mauritania and Morocco.

Morocco, at first silent over these initiatives, has subsequently roundly rejected, at least in public, both the idea of a summit and that of establishing Polisario in the Mauritanian part of the Sahara. A Polisario mini-state remains anathema to King Hassan.

This strong Moroccan opposition has for the moment weakened the chances for a negotiated settlement. But the Mauritanian Government is understood to be pressing hard for a negotiaited settlement. The Mauritanians are said to feel that their reluctance to continue the armed struggle against Polisario will gradually isolate King Hassan and make Moroccan military involvement less easy to sustain on the diplomatic front.

Although France has not publicly put pressure on Morocco, it has nevertheless gone a long way to patch up its relations with Algeria which in recent weeks were seriously damaged by French military backing for the Mauritanian - Moroccan anti-Polisario stance. Spain, too, has improved its relations with Algeria and is anxious for an honourable solution in the Sahara.

Conservatives denounce da Costa team

By Jimmy Burns

LISBON, August 30.

PORTUGAL'S Conservative Party (CDS), whose disagreement with the Socialists led to the collapse of the Soares Government last month, today criticised Sr. Alfredo Nobre da Costa, the new Prime Minister.

A party statement issued after the swearing-in of the new Government by President Ramalho Eanes confirmed that the fate of Sr. da Costa and his team remains in the balance.

Only last week the Conservatives were the first to warm to Sr. da Costa's nomination. Now they accuse him of having formed a Government to the left of the Socialist Party. The Conservatives, who were absent from yesterday's swearing-in, regard three new ministers as pro-Communist: Sr. Carlos Correia Gago, the Foreign Minister, Sr. Antonio Costa Leal, the Labour Minister, and Sr. Acacio Pereira Magro, Social Affairs Minister.

The conservatives are also angered by a statement yesterday by Sr. da Costa indicating that his Government, far from acting as a stop-gap Administration, was prepared to carry out major policy decisions. The conservatives say the "absolute and limitless" character assumed by the new Cabinet is incompatible with democracy.

The Socialists have already declared their aversion to an administration of political independents and technocrats.

Against this background of discontent, Sr da Costa has less than two weeks before he has to present his Government's programme to Parliament

Rome bomb blast

A bomb exploded yesterday outside the entrance to Rome's main anti-fascist war memorial, the Fosse Ardeatine caves, where German troops shot 335 Italians in a reprisal killing in 1944, Reuter reported. The heavy iron gates to the caves were badly damaged in the explosion, but there were no casualties.

W. German Cabinet fails to settle payroll tax row

BY ADRIAN DICKS

BONN, August 30.

THE West German Cabinet put the finishing touches today to the DM 12.25bn package of stimulatory measures which it decided in broad terms at the end of July, in compliance with its pledge at the Bonn world economic summit meeting.

In spite of long hours of discussion, however, Chancellor Helmut Schmidt and his colleagues were not able finally to resolve the increasingly shrill domestic political row over their plan to abolish the payroll tax levied on businesses by some state governments.

As a result, the overall Bill in which the tax cut measures will be presented to Parliament this autumn are likely to run into influential opposition from the Chancellor's own Social Democratic Party in several major states, as well as from the Christian Democratic opposition.

The main features of the package, already fixed in July, are a DM 10.7bn reduction in personal income tax through higher basic allowances and reform of the "tax trap" that catches medium income earners, introduction of a DM 9,000 tax-free allowance for family support, and increased child allowances. All these measures are intended to come into force on January 1, 1979.

In addition, allowances for old age pension contributions will be raised, and child payments further increased, on January 1, 1980. Part of the overall cost of shifting the tax burden appreciably from personal to indirect taxes will be met by raising the standard rate of value added tax to 13 per cent from July 1, 1979.

While most of these provisions have not been changed from the July 28 original draft, the Cabinet and the Finance Ministry have been wracking their brains to devise a formula that would compensate the states and local authorities for the abolition of the payroll tax by January 1, 1980—to which the Bonn coalition remains fully committed.

Herr Hans Matthoefer, the Finance Minister, now has the delicate task of persuading the *state and local authorities to* accept a complex deal to compensate for the DM3bn hole in their revenues that would be left by abolishing the payroll tax. The SPD-FDP—governed state of North Rhine — Westphalia, which would be hardest hit by the reform, is however showing no inclination to compromise.

Strike called over Cadiz jobless

BY OUR OWN CORRESPONDENT

MADRID, August 30.

THE MAIN trade unions have decided to call a strike of all agricultural workers in the Cadiz region of southern Spain to press the Government to provide more special funds for unemployment.

The Cadiz region is one of the areas worst affected by unemployment and funds provided by the Government six weeks ago for public works employment have been exhausted.

The unions are especially concerned at the plight of the *jornaleros*, those agricultural labourers recruited and paid by the day. There are 7,100 such workers in the Cadiz region who can find no employment, and the general level of unemployment there is now believed to be more than 16 per cent of the active population.

The Government decided on July 15 to approve a special grant of Pta 2bn (£13.7m) to ease unemployment throughout the region of Andulucia by offering emergency jobs in public works projects. Of this, Pta 172m (£1.2m) was earmarked for the Cadiz region.

However, by this week this sum had been exhausted with roughly 70 per cent having been absorbed by the costs of the materials in the public works projects. The unions estimate that an average of Pta 5.6m (£38,500) is now needed each day.

The strike is intended not only to draw Government attention to unemployment in the area and obtain more funds but to persuade the authorities that the scheme should cover employment for a six-day week and include those under 18 years old.

Other parts of Andalucia are almost as seriously affected by unemployment. In the Granada region, for instance, there are 20,000 unemployed agricultural workers of whom only 9,000 are covered by public works special employment. In the past six months, Cadiz has been the scene of several violent clashes between unemployed and the security forces.

- Spanish police today reacted angrily to the murder of four of their officers by publicly condemning the Government for failing to act against guerrilla violence.

The Policemen's Association, which represents 85 per cent of the 40,000-strong armed police, said it was "grievously dissatisfied at the alarming lack of protection suffered by society which we are entrusted to defend. That defence is not possible when weakness of public powers and contempt for the law reach levels now current in Spain."

The strongly-worded statement was seen as a retort to the killing last Monday of two policemen and two members of the paramilitary Civil Guard in separate but apparently co-ordinated attacks across northern Spain.

The extremist group GRAPO has claimed responsibility for two of the murders, and police suspect that ETA, the Basque separatist group, was responsible for the others.

Bonn spy claim inquiry

BY OUR OWN CORRESPONDENT

BONN, August 30.

THE PERSONAL aide to Herr Egon Bahr, business manager of the West German ruling Social Democrat Party (SPD), is under investigation following allegations of spying in Bonn made by a high-level Romanian defector to the West.

An SPD spokesman said today that "vague statements" had been made by the Romanian which could be interpreted as involving the aide, Herr Joachim Broudre-Groeger. No charges had been made and Herr Broudre-Groeger, aged 34, remained at his post.

The SPD statement followed a report in the newspaper Bild that Mr. Ion Pacepa, a Romanian Government official who vanished earlier this month in Cologne, had passed information to the CIA about espionage activity in Bonn.

Metal industry wage costs rise

COLOGNE, August 30.

WAGE COSTS in the West German metal industry rose by 6.3 per cent in the first half of this year, against 3.5 per cent a year ago, while productivity rose by only 0.5 per cent in this period, the metal industry employers association Gesamtmetall said.

The association said in a report that unsatisfactory productivity and high wage costs are harming the industry's international competitive strength and threatening jobs.

It noted, contrary to the rising trend in costs, that prices are increasing more slowly and show a 2.4 per cent rise in the first half against a 4.2 per cent rise in the same period a year ago.

Reuter

China may sell crude oil to obtain U.S. equipment

BY DAVID BUCHAN

WASHINGTON, August 30.

CHINA is considering selling crude oil as a means of paying for the purchase of offshore oil equipment, which it is discussing with four U.S. oil companies. The four companies invited to Peking for talks this summer are Phillips, Exxon, Union and Penzoil.

But reports that a fifth U.S. oil company, Gulf, had actually been offered a quantity of Chinese crude were today denied. A Gulf spokesman said that no such offer had been made, though Peking was known to be keen to increase its oil exports, and that the company had in fact decided that refining the relatively heavy Chinese crude was not an economic proposition at the moment.

Officials at the National Council on U.S.-China Trade said today that China was looking at various ways, including crude sales, to pay for the offshore exploration and production equipment it hopes to buy from one or more U.S. oil companies.

But they also pointed out that, while China had for some time sold limited quantities of refined petroleum products to neighbouring countries, the amounts of crude they could offer would be marginal to the needs of both the U.S. and U.S. oil majors.

Chinese crude production amounted to some 90m tonnes last year. Quite apart from growing domestic needs, Peking is also committed by its agreement with Japan earlier this year to increasing its sales to that country from 6.5m tonnes last year to 15m tonnes by 1982.

Nevertheless, any Chinese crude sales would have a political importance going beyond their economic contribution to U.S.-China trade — which in any case is expected to show a marked increase this year — at a time when the Carter Administration is keen to improve relations with Peking.

Meanwhile, there are still reported rumblings of serious discontent among some senior Administration officials about President Carter's decision a couple of weeks ago to allow the controversial sale of a $144m oil drilling bit plant to the Soviet Union. That decision followed Mr. Carter's earlier veto on the sale of a Sperry Univac computer to the Russians.

Both Mr. James Schlesinger, the Energy Secretary, and Mr. Zbigniew Brzezinski, National Security Adviser, are reported to be urging the White House to reconsider its decision on the oil drilling plant sale by the Texan company, Dresser Industries.

With support also from the Defence Department, both have apparently argued that, on political grounds, the sale should not go ahead while current tensions with Moscow contnue, and, on security grounds, that the inclusion in the Dresser deal of an ultra-modern $1m electronic welder is unwise.

There was no indication of how President Carter, now heading back to Washington from his Western holiday, might react to these arguments. But proponents inside the Government of a ban on the Dresser deal regard action as urgent, as Russian technicians have now arrived in Texas to be briefed by Dresser Industries on the plant.

Pressure on Toyota for U.S. plant

By John Wyles

NEW YORK, August 30.

A TEAM from the New York and New Jersey Port Authority is to visit Japan next month in a bid to persuade the Toyota Motor Company to build an assembly plant near Jersey City.

It is not clear why the port authority is doing so, because Toyota is insisting that it has not even taken a decision in principle to manufacture cars in the U.S. A spokesman for the company in Califronia said to-day that Toyota had examined no potential sites in the U.S., nor had it invited the authority to submit proposals.

Japanese car prices have become increasingly unstable in the U.S., because of the steady appreciation of the yen against the dollar, and many motor industry observers expect Japanese manufacturers eventually to start assembling cars in the U.S. in order to preserve their market here. Honda has taken a decision in principle to build a plant alongside a motor-cycle assembly plant which it is building in Ohio. Nissan, which is the second largest importer into the U.S., is completing a feasibility study on the possibility of manufacturing here.

Toyota, on the other hand, has been more reticent on the subject although it acknowledges that general discussions have been going on within the company for some time.

NY newspaper hopes rise

BY JOHN WYLES

NEW YORK, August 30.

A GLIMMER of hope was cast on the New York newspaper strike by an agreement of publishers and union leaders to continue talks which began yesterday.

A federal mediator, Mr. Kenneth Moffet, has called the two sides together on several occasions since publication of New York's three daily newspapers was halted on August 9, but hitherto contacts have proved increasingly inconsequential. However, the Publishers Association of New York yesterday tabled a proposal for the first time since the strike began which, though rejected by the pressmen's union, appears to be providing some basis for negotiations.

The pressmen's union leader, Mr. William Kennedy, welcomed today the fact that a proposal had been made and said that his union woud counter with its own proposal today. The pressmen's 15,500 members at the three daily newspapers, the New York Times, the Daily News and the New York Post, stopped work when the publishers unilaterally posted reduced manning levels.

They are seeking a new three-year contract which would ultimately reduce pressroom manning by about half. The newspapers claim that overmanning has produced a cost burden which is preventing them from competing effectively with suburban newspapers in the New York area.

Since the stoppage began, four other unions whose members were refusing to cross the pressmen's picket lines and whose contracts expired at the end of March have called their members out on strike. This raises the possibility that the publishers will have to reach settlements with others in addition to the pressmen, before a resumption of publication can be assured.

Carter to lobby for natural gas Bill

WASHINGTON, August 30.

PRESIDENT CARTER, who left on his vacation 12 days ago thinking he had finally achieved a natural gas pricing compromise, returns here today to try again to salvage this key element in his stalled energy plan.

There are doubts, inside the White House and on Capitol Hill, about whether the President will succeed in persuading enough Congressmen to approve the controversial gas Bill. The measure would deregulate the price of newly discovered natural gas by 1985 and permit sizeable price increases in the interim.

"It's going to be a tough, close fight but we remain cautiously optimistic," one White House official said yesterday about chances for Congressional approval of the gas pricing Bill.

Another Administration official said chances of Senate passage of the measure hinged on the votes of about two dozen Senators still uncommitted on the issue. "There is a big undecided segment in the Senate and the whole thing rests with it," the official said.

Cutting short his Western vacation trip by two days, President Carter will try to convince those uncommitted Senators that the gas pricing Bill is essential to help bolster the U.S. dollar, among other reasons.

With Congress in recess and most legislators out of town, the President intends to do his lobbying in two basic ways. "He will be on the phone constantly" with Senators, said one Presidential aide. In addition, President Carter and other Administration officials will try to enlist the support of various interest groups and urge them to lobby Congress on the White House's behalf.

Tomorrow and on Friday, the President may meet a group of Governors, as well as representatives of farm groups and major energy users to discuss the natural gas Bill. Some key economic officials, including Mr. Robert Strauss, the inflation counsellor, and Mr. G. William Miller, the Federal Reserve chairman, plan to meet top U.S. banking officials today to try to win support for the Bill.

AP-DJ

Post row mediator named

By Our Own Correspondent

NEW YORK, August 30.

THE FEDERAL Mediation and Conciliation Service has named Mr. James Healy, a Harvard professor, to mediate in the postal dispute which is still deadlocked though less close to a strike than last week.

Mr. Healy, a professor in labour relations and an experienced mediator in many industries, will have to bring the postal management and the unions together, at which point the two parties will have 15 days in law to thrash out the main issues of pay and job security. If at the end of 15 days there is still deadlock, Mr. Healey will have to decide the issues himself.

These talks, which were agreed on by both sides to avoid the possibility of a strike, are expected to start by the end of the week.

Merrill Lynch talks

Merrill Lynch is holding preliminary discussions on acquiring Huntoon Paige, a mortgage banking and brokerage firm, Reuter reports from New York. If the acquisition is completed, Huntoon Paige would become part of Merrill Lynch Hubbard.

U.S. COMPANY NEWS

Chrysler looks for 10 per cent rise in new car sales: FTC probes Chemetron gases sale; Japanese stake for Data General —page 36

Nicaragua strike spreads and violence intensifies

BY JOSEPH MANN

MANAGUA, August 30.

A NATIONAL strike, initiated in Nicaragua five days ago in order to press General Anastasio Somoza into resigning the presidency, is gaining momentum after a slow start.

Although public transport, banks, petrol stations and hotels continue to function, a tour of shopping centres in Managua yesterday and to-day showed that many shops had shut down, the owners of some of them having told their employees to stay home until next week. A number of businessmen are offering workers food or partial remuneration for the duration of the strike.

Reports from the provinces indicate that adherence to the anti-government strike is even greater than in the capital.

The government, while seeking to play down the protest, has obliged government workers, employees in essential sectors and foreign and domestic banks to stay on the job.

Most Nicaraguan industrial concerns, however, have not yet joined the strike. If this sector moves to support the anti-Somoza action, much of the national economy would be shut down.

At the same time, bands of anti-Government protesters in the towns of Matagalpa and Esteli have taken control of the downtown areas and are meeting only sporadic resistance from Government troops stationed there.

Youths wearing masks or nylon stockings over their heads patrol the streets of the two towns, firing shots or throwing home-made bombs at soldiers and police. Exchanges of shots occur almost daily between troops and anti-Somoza forces in a number of other Nicaraguan towns and cities, including Jinotepe, Leon, Masaya and Diriamba. Outsiders entering these areas run the risk of being fired on, and many families who support the Somoza regime have left the area.

The scenes in some of these towns are reminiscent of street battles in Beirut. Up to now, though, the Nicaraguans are not usually employing weapons heavier than machine guns and small bombs.

The strike and widespread violence in Nicaragua come on the heels of a highly successful guerrilla attack last week, in which the Sandinist Liberation Front took control of the Congress and held more than 1,000 people hostage. The Somoza regime, the target of sporadic, violent protests for almost a year now, made humiliating concessions to the guerrillas. The administration allowed them to leave the country safely, along with a group of newly-released political prisoners and $500,000 in ransom.

The Somoza regime, in power through various members of the family since 1933, rode out a general strike earlier this year, but is currently facing the stiffest and most widespread opposition in its history.

Reuter adds: At least 10 people have died in pitched battles between anti-government demonstrators and the National Guard in Matagalpa, eye-witnesses said today. They said that the air force bombed the town yesterday before an assault by crack troops. As fighting continued overnight into its fourth day, the town was described as a battle-ground.

"There are quantities of dead. We are still carrying them to their relatives," according to the local Red Cross Chief, Sr. Eulogio Reyes, "So far we have moved 10 dead, but there are more, as well as wounded."

Peru emergency declared

LIMA, August 30.

THE PERUVIAN Military Government took another step towards a confrontation with striking miners today when it put five more mining provinces under a state of emergency.

An official statement issued at the end of a cabinet meeting said that the central Andean provinces of Huánuco, Junin, Pasco, Huancavelica and Ayacucho were placed under a state of emergency and constitutional guarantees suspended. Two other provinces were put under a similar regime last week.

It accused unnamed elements of trying to disrupt law and order and worsen the national economic crisis. The Government claims the strike is costing Peru $2.5m a day in foreign exchange earnings from exports of metal, at a time when it needs every dollar it can get to maintain payments on its foreign debt.

Miners are insisting that some 320 union militants fired over the past 18 months be re-instated to their jobs. But State and privately-owned mining concerns have remained adamant in their refusal to agree to this.

Reuter

MEXICAN ECONOMY

The oil that soothes but also irritates

MEXICO CITY, August 30.

DESPITE HUGE oil reserves in Mexico the cancers which have eaten away at the economy for years are still afflicting the country.

The shar pincrease in the oil reserve estimates has restored Mexico's international credit rating. Its $26bn foreign debt seems certain to be whittled down. But, despite the oil-based balm, the private investment needed to create jobs continues to lag. Mexican workers are raising their wage demands and calling for more and longer strikes, the population growth defies solution, and farm problems persist.

It is becoming clear, in the words of a U.S. State Department economist, that "the problems of Mexico will not be solved by oil, and its major problems may well be worsened by it." Indeed, adds a Commerce Department analyst in Washington, "there is a growing school of thought that oil could be harmful to Mexico now. It provides an excuse, a crutch, not to solve the basic structural problems."

However, Mexico has plenty of oil to sell. Probable reserves are estimated at 31bn barrels and possible reserves at 120bn. Among other things, President José López Portillo is expected to announce another sizeable increase in reserves during his annual state of the nation address on Friday.

But other comparisons paint a different picture. The age pattern of the population of 64m —almost half under 15 years of age — is matched only by countries like Pakistan and Bangladesh. Income distribution in Mexico is among the most unequitable in the world.

Of all the ills, unemployment is worrying Mexicans the most. The government concedes that only about half of the work force in Mexico City is fully employed, and official statistics show that industrial employment in the nation dropped by 1.6 per cent last year, with no signs of a reversal in the first half of 1978.

Sr. Alfonso Sanchez, a senior official in the Confederation of Mexican Workers, believes that the immediate need is for 5m new jobs. He adds, "we are hoping that, with the exploitation of oil, the government can create new jobs

But sceptics contend that employment is not easily increased by extractive industries like that of petroleum, in which creation of one job requires an investment of some $100,000.

Moreover, feeding Mexico today is only half the job it will soon become. Already the 10th largest in the world, the Mexican population is expected to double by 2,000. This surge—due to a high birth rate and a relatively low death rate—is the worst problem, and the one least soluble by oil money. After decades of governmental urging of the populace to reproduce, initial official efforts to promote birth control have met with some success in the past couple of years. But most experts credit that success to acceptance by educated people and express little hope of convincing the masses.

AP-DJ

OVERSEAS NEWS

Sithole takes tough line against all-party talks

BY OUR OWN CORRESPONDENT

SALISBURY, August 30.

THE RHODESIAN nationalist leader, the Rev. Ndabaningi Sithole, today declared his opposition to new all-party peace talks on Rhodesia and asserted that one-man, one-vote elections must go ahead before the end of the year as planned in the country's internal settlement.

Speaking at a Press conference, Mr. Sithole said that if only one sixth of the estimated 3m black voters turned out at the elections planned for December, the country would have a black majority Government.

Flanked by senior party officials and before 500 cheering supporters, Mr. Sithole took his toughest line yet against the British and U.S. plan for an all-party conference involving Rhodesia's Transitional Government and the Patriotic Front Guerrilla alliance led by Mr. Joshua Nkomo and Mr. Robert Mugabe.

"We are satisfied that the reason for an all-party conference is to wreck our agreement and we are not prepared to wreck our agreement," he said.

Mr. Sithole, one of three black leaders who joined with Mr. Ian Smith, the Prime Minister, in the Transitional Government, insisted that December elections would be held. "Elections according to the Salisbury agreement must be held or else there is hell," he declared.

Mr. Sithole ducked or ignored reporters' questions on how an election could be held when some 7,800 guerrillas throughout the country were pledged to disrupt the polls.

He accused the foreign Press of attempting to denigrate the domestic agreement and said he was satisfied that two million people would vote.

Asked what had gone wrong with the transitional Government's ceasefire efforts, Mr. Sithole said: "Nothing has gone wrong. We know the war is bound to come to an end before the year is out."

Most observers regard December elections as an impossibility and believe that Salisbury will be forced to attend all-party talks.

Meetings held in tribal areas by Government Ministers in the past few months have drawn tiny audiences. Some meetings have had to be scrapped because no one turned up. Officials blamed guerrilla intimidation.

Another of the black leaders in the transitional Government, Chief Jeremiah Chirau, has, in effect, urged all-party talks. Mr. Smith and Bishop Abel Muzorewa have said they will go if it is in the national interest.

Mr. Sithole echoed the anger of other local black leaders at recent praise of Mr. Nkomo by Dr. David Owen, Britain's Foreign Secretary. "If Dr. Owen is so loyal to Mr. Nkomo, then he must crown him not King of Zimbabwe, but King of Britain," he said.

Quality control in Chinese industry

By John Hoffman

PEKING, August 30.

CONCERN ABOUT the quality of Chinese industrial products has brought a significant organisational change in the nation-wide machinery-building industry.

Orders have gone out from the central government's first Ministry of Machine Building for the rationalisation of factories and production methods to ensure specialisation and efficient co-ordination.

The ministry is responsible for the manufacture of farm machinery and motor vehicles.

Provincial authorities throughout China have been told to set up specialised companies and consolidate managements, re-group factories according to their products, and raise the technical quality of manufactured goods.

Machinery plants are now widely scattered under diffuse management. Most operate inefficiently because they attempt to integrate all processes from forging to parts-processing and assembly. Competition for materials and markets has led to wasteful production delays, poor quality and high costs.

The industry's reorganisation means that provinces in north-west China will be responsible for building 50-hp tractors and northern China centres will manufacture the 55-hp model. Eight co-ordinated motor vehicle plants will be set up and affiliated with nearby factories producing specialised parts.

In Peking, 147 autonomous machinery factories have been brought together under the city's new machinery industry department. Twenty group companies have been set up to co-ordinate supplies and production.

The new China news agency, reports that the nation-wide reorganisation of the industry would take from three to five years.

The change in the industry's structure will overcome the growth-stunting effects of excessive "self-reliance" which became China's preoccupation during the "great leap forward" of the 1960s. Small, self-contained and inefficient back-street factories mushroomed all over China.

The official newspaper, the People's Daily recently published an account of a commune's disastrous experience with three tractors it had bought from inefficient factories.

The first tractor worked sporadically for a year before its faulty gearbox failed completely. The second had its cylinder head fitted back-to-front and the engine seized the first time it was started. The third was so badly put together that it never worked at all.

Mr. Chou tze-Chien, the First Minister of Machine Building, travelled to the commune, near Peking, to deliver his personal apology. He repaid the 15,000 yuan the commune had spent on one of the tractors and promised compensation for the repair of the others.

The minister admitted to the farmers that some factories were producing inferior machines.

Angola and S. Africa in PoW swap

South Africa and Angola are to exchange prisoners of war, according to an announcement by Mr. R. F. Botha, the South African Foreign Minister, John Stewart reports from Cape Town.

The exchange is to take place with the help of the International Red Cross at a date to be announced.

At least seven South African prisoners of war are held in Angola, while publicised information in South Africa indicates that a handful of Cubans and possibly a large number of Angolan Government troops are being held in South Africa and South-west Africa. The prisoners were taken in late 1975 and early 1976 during South Africa's involvement in the Angolan civil war.

Meanwhile, about 900 refugees trying to escape from fighting between Government forces and Unita rebels in the southern Angolan town of Calais, were reported to be stranded on the Angolan side of the Kavango river

Vorster in hospital

Mr. John Vorster, South Africa's Prime Minister, who is 62, is suffering from physical exhaustion and bronchitis, Reuter reports from Pretoria. He was admitted to the Tygerberg hospital in Cape Town on Tuesday for an annual check-up and will remain in hospital for at least a week.

Rennies chief fined

Mr. Charles Fiddian-Green, chief executive of Rennies Consolidated Holdings, was fined R10,000 (£5,800) in the Rand Supreme Court, Johannesburg yesterday, for contravening South Africa's exchange control regulations. Reuter reports. He was convicted on Tuesday.

Kenya rehearsal

A full dress rehearsal was held yesterday for the funeral today of President Jomo Kenyatta of Kenya, Quintin Peel reports from Nairobi. The coffin will be borne from State House to Parliament on the gun carriage used at Sir Winston Churchill's funeral. Contractors have been working every night for a week to complete the mausoleum

Shah faces demand for return of exile

BY MICHAEL TINGAY

TEHRAN, August 30.

WHILE CLASHES between police and demonstrators have continued in towns in Iran, a campaign has been mounted against the Government by some parts of the Opposition, demanding the return from Iraq of exiled Shi'ite leader Ayatollah Khomeini, who is the real and symbolic head of Iran's anti-Shah religious extremist community." The campaign is partly orchestrated and partly spontaneous.

Following reports in Tehran newspapers yesterday that the new Prime Minister, Jaafar Sharif Emami, had authorised contacts with Khomeini, the Government was advised to issue categorical denials of any contacts. Yesterday's evening papers printed a report with prominent pictures of the Ayatollah, the first to appear in public in 15 years. They were quickly cut out of the newspapers and plastered over walls and windows in the bazaar district of Tehran.

After the new Prime Minister's assertion that his Government would permit political freedoms offered in the Iranian constitution, it was predictable that new political parties would be formed and that demands would be made for Iran's five ayatollahs (religious leaders) to take their places in Parliament. What was not clear was the speed with which demands would build up.

Yesterday's Iranian papers, indulging in their third successive day of de facto Press liberty, continued to pour out details of opposition demands, both secular and religious.

For a picture of Khomeini to appear anywhere in public would have been unthinkable in the very recent past. The ayatollah was exiled in 1963 after opposition to the Shah's decision to give women the right to stand in elections.

Meanwhile, China's Chairman Hua today began the first full day of his three-day state visit to Iran.

Discussions were held between Chinese and Iranian delegations and Chairman Hua held a private meeting lasting more than half an hour with the Shah.

The delegations are understood to have discussed the ironing out of details of two agreements on cultural and scientific co-operation. The two leaders are believed to have discussed security in the Gulf.

Lebanon deaths inquiry

BY IHSAN HIJAZI

BEIRUT, August 30.

A SECURITY drive by Syrian troops of the Arab peace-keeping force in northern Lebanon has turned into a crisis within a crisis after an undisclosed number of soldiers have been referred to a military commission of inquiry in connection with the killing of civilians.

President Elias Sarkis met with Mr. Selim al Hoss, the Prime Minister and other officials today to discuss the situation. The President yesterday rushed Col. Sami al-Khatib, the Lebanese commander of the Arab peace force, to Damascus for consultations with Syrian leaders.

After his return here a communique by the forces command announced that an inquiry is to be conducted into the murder of six civilians from the Maronite town of Bsharri in the Cedars of Lebanon area some 70 miles northeast of here.

Two of the dead were the nephews of the town's member of Parliament. Mr. Habib Kairouz, who heads the most prominent family in Bsharri.

The six were said to have been abducted earlier by a unit of Syrian soldiers.

ALGERIAN DEVELOPMENT

Focus on hinterland

BY FRANCIS GHILES

ALGERIAN planners are currently taking stock. The third four-year development plan, due to start next January, will probably be submitted to the congress of the ruling FLN party when it meets some time this autumn. This year—proclaimed a "year of reflection"—has been devoted to examining the results of the last four-year plan (1973-1977) and while there is much to be satisfied with, a change of emphasis is expected.

Algeria is one of the smaller OPEC oil producers, but with a population of 18m, and one of the highest birth rates in the world, it has plenty to spend its income on. Even before the five-fold increase of the price of oil in 1973-74 it had embarked on a very ambitious plan to develop its natural gas resources and establish a sound industrial base.

Developing its gas resources fast, which meant operating in the vanguard of the new and very expensive technology of gas liquefaction—was a gamble. But with oil production having already peaked and with some of the largest reserves of natural gas in the world it was one which appeared to make sense.

Meanwhile agriculture, badly disrupted during the bitter war of independence, was neglected. Production fell, although it appears to have stabilised in the past two years. The country is short of water and arable land, but President Houari Boumediene, who is of peasant stock himself, knows that more money and help must be given to agriculture if Algeria is not to become entirely dependent on outside food supplies and if the countryside is not to be depopulated.

However, the development of the oil, and particularly the gas industry (liquefaction plants, a pipeline under the Mediterranean to Italy and a host of other projects) will remain the highest priorities if only because oil and gas, until the end of the century, will be by far Algeria's largest hard currency earners. Oil will remain Algeria's most lucrative export until the early 1980s, and then gas will take over.

In industry other than oil and gas, the emphasis will be on increasing efficiency (a number of factories from sheer inefficiency are working at about one-third of capacity) which means ensuring better co-ordination between the string of state monopolies which have sprung up in recent years and various ministries.

The results of the last plan are, by most Third World standards, remarkable. Investment was $8.2bn, more than double that during the first four year plan (1970-1973) and, according to a recent World Bank report, unemployment in the non-agricultural sector has been reduced by more than a third to 10 per cent.

Since 1970, investment has grown on average more than twice as fast as consumption, and Algeria now enjoys one of the highest ratios of capital formation to GDP in the world, 44 per cent during the last plan period. How long that pace can be maintained is an open question. Pressure for wage increases and greater access to consumer goods, of which the vast majority of the population has so far been starved, is growing all the time.

A massive effort has been made to develop infrastructure and water supplies, especially inland. The lack of infrastructure has hampered efforts to site industry inland but the Government is determined to press ahead as it wants to prevent most of the population and activities being concentrated along a narrow coastal strip.

The symbol of the will to open the hinterland and provide greater opportunities to those living in the south remains the Trans-Saharan highway, started in 1971. Some 800 km of the 1,200 km which will eventually link Algeria with Niger and Mali are now open to traffic.

A more balanced growth in regional terms will be helped by the decentralisation which the World Bank report says has been vigorously pursued, not least in the socialist agricultural sector where each farm is now responsible for its cropping patterns (the amount of field, tree and vegetable crops it produces).

Despite a slight shift in its favour in 1976, agriculture was the poor relation in Algeria's last two development plans. With irrigation, it only accounted for just over 15 per cent of all investment against 53.6 per cent in the first four-year plan and 45.5 per cent in the second plan. As a result, the growth in production has been sluggish.

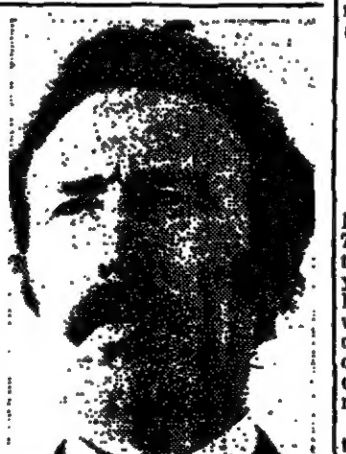
The index of agricultural production had only reached 135 in 1976 from a base of 100 in 1961-1965. On a per capita basis the relative decline is even more striking: the index has remained at 88 since 1970.

With improving standards of living the average consumption of food per capita has risen. Algeria therefore imports foodstuffs on an increasingly large scale. In 1977 the country imported one-third of its cereal. Demand for cereals is expected to double by the end of the century, so that the need to increase production is pressing.

Imports of foodstuffs now account for one-fifth of the import bill and the cost to the State is much higher if one adds in subsidies paid on bread, sugar, coffee and tea. In the early 1960s Algeria was still a net exporter of food.

Improving output on the land also means improving the standard of living of the peasants: in a number of areas this is happening, if slowly. The process will have to be speeded up if the drift of people into the cities is to be stopped.

Any minor civil servant in Algiers enjoys a higher standard of living than those who till the land, and pay in the new industries is very high. The lure of the city is powerful, despite impossible living conditions in places like Algiers: its attraction



President Houari Boumediene

is not explained solely by higher pay, but also by the centralisation of power which has been so characteristic of Algeria since independence.

Another major but very sensitive problem is the free circulation of information. The newspapers, radio and TV seldom allow any real debate on topical issues and content themselves with singing the praise of the Revolution.

This lack of freedom of debate is having another serious consequence: a number of Algerians trained abroad, either in universities or on the shopfloor of factories in France and Germany are refusing to go home, even though their situation is precarious in Europe.

These problems of social organisation are increasingly important, and liable to prove a much greater burden than shortage of funds.

Although Algeria's debt is fairly high ($12.3bn, at the end of last year of which $7.6bn had been disbursed) it is not dangerously so. Furthermore figures of debt and debt service ration do not take into account —to give but one example—the helping hand of Libya, which earlier this summer lent close to $1bn on concessionary terms.

So far Algeria has built a potentially powerful industrial machine. The next stage is more delicate. It will have to make that machine work, improve the output of the agricultural sector and ensure that the basic social needs of an industrialised society are met.

CREDIT LYONNAIS

Mr. Jean Deflassieux has been appointed head of all the international activities of Credit Lyonnais. His immediate deputy will be Mr. Georges Smolarski.

Mr. Deflassieux succeeds Mr. T. de Feuilhade de Chauvin, who has retired from the bank.

Mr. Michel Meynial is General Manager of the Credit Lyonnais U.K. branches.

WORLD TRADE NEWS

Japan plans drastic cut in air fares

By Charles Smith

TOKYO, August 30.

THE JAPANESE Government has made up its mind to propose a "drastic" reduction in international air fares out of Japan in order to remove anomalies caused by the upvaluation of the yen, according to the director general of the Economic Planning Agency, Mr. Kiichi Miyazawa.

Mr. Miyazawa told the Diet (Parliament) yesterday that proposals to cut air fares would be laid before the International Air Transport Association (IATA) this autumn. IATA is likely to welcome the proposals since several of its member airlines have been pressing for agreement on a new air fare structure which would bring the cost of air travel out of Japan more into line with costs in other parts of the world.

Prices of international air tickets sold in Japan are at present converted from the dollar rate for the same journey if a ticket is bought outside Japan using an exchange rate of $1 equals Y296. Since the actual yen-dollar exchange rate is now in the region of $1 equals Y190 this system results in air tickets for journeys out of Japan costing far more in real terms than tickets for the same journey back to Japan bought at the other end.

The full tourist class fare from Tokyo to London is Y300,500 one-way at present, whereas the London-Tokyo air fare is £552.50. At the current rate of exchange this works out at about Y214,000.

Air travellers who are "in the know" about this situation and who are paying the full fare have given up buying return tickets for journeys out of Japan because of the savings involved in paying for the return portion of the fare outside Japan. Japan Air Lines says that its ticket agents are ready to explain the situation to customers "if they ask," but the unwary will be told nothing.

JAL, which until recently followed a policy of strenuously upholding the existing system, estimates that it would lose up to 40 per cent of its revenue from international passenger flights if a simple switch were made from the Y296 to the dollar exchange rate to the current market rate as the basis for computing air fares.

JAL points out that 80 per cent of its staff are paid in yen and argues that yen-denominated costs must be matched against yen-denominated revenues if it is to stay in business.

Despite this, JAL officials admit that changes are needed. One proposal is to split the difference between fares into and out of Japan by raising those denominated in other currencies and lowering yen denominated fares.

The absurdity of maintaining an almost 50 per cent premium on standard air fares out of Japan is made worse by the fact that virtually no progress has been made to date on the introduction of cheap individual fares (as opposed to group fares) for Japanese travellers.

Japan has nothing corresponding to the Laker Skytrain for would-be travellers to the West Coast of the U.S. (or to Europe, for that matter). The result is that whereas it is now possible to travel from London to Los Angeles for approximately the equivalent of Y35,000 on a cut-price individual ticket, the individual Japanese air traveller has to pay Y150,000 for the much shorter journey from Tokyo to San Francisco.

JAL says it is in favour of introducing a system corresponding to the Apex fare on Atlantic routes which would offer a 35 per cent discount to passengers who book three weeks in advance and agree to travel on a specific day. If it does so and if there is a simultaneous adjustment in standard air fares out of Japan, the individual Japanese air traveller may be faced with a situation in which journeys to the West Coast of the U.S. or to Australia which have hitherto looked prohibitively expensive suddenly become comfortably affordable.

The effect of this on the numbers of Japanese who travel abroad can only be guessed at. However, it must be borne in mind that, while Japan has lagged behind Europe in cutting individual air fares the group discount system is highly developed. It may be no coincidence that the average Japanese tourist at present seems to be happier travelling in a group than on his own.

New Soviet deficit with West

BY DAVID SATTER

MOSCOW, August 30.

THE SOVIET UNION built up a 2bn rouble (£1.53bn) deficit in trade with the West during the first half of 1978, according to the Soviet weekly Ekonomicheskaya Gazeta. This was one of the worst results in recent years.

The sizeable deficit was particularly striking because it reversed the trend apparently implicit in the Soviet achievement of a 230m rouble (£175.6m) surplus in trade with the West during the last six months of 1977.

The figures show that during the first half of this year Soviet imports of Western goods increased 9 per cent to a value of 5.9bn roubles (£4.5bn) from 5.4bn roubles (£4.12bn) during the comparable period of 1977.

At the same time, Soviet exports to the West decreased to 3.9bn roubles (£2.98bn) in the first half of 1978 from a value of 4bn roubles (£3.05bn) during the first half of last year.

The result was that the Soviet deficit for the first half of 1978 rose 43 per cent to 2bn roubles from 1.4bn roubles during the first half of 1977, a year in which the annual trade results were greatly improved by the unexpected Soviet surplus in Western trade registered during the last six months.

With the need to purchase expensive machinery to help in fulfilment of the 1976-80 Five Year Plan and no early prospect of a decrease in sizable Soviet grain purchases, it now appears unlikely that the Soviets will be able to go into surplus with the West during the second half of this year as they did in 1977.

Industrial purchases normally increase toward the end of a Five Year Plan and despite the prospect this year of a good grain harvest, the Soviets will still need to buy grain abroad to feed cattle for meat production.

The prospects therefore are for 1978 annual deficit to far exceed the 1977 deficit, which stood at R1.11bn, the best result in the last three years.

The figures published today show that overall, the Soviets posted only a modest R700m deficit in trade out of total turnover of R34.5bn.

Much of the deficit in trade with the West was made up by traditional Soviet surpluses in trade with the Socialist countries and the Third World.

Total Soviet trade volume expanded 7.3 per cent during the first half of 1978. From R32.1bn during the first half of 1977 with the share of the West declining to 28.3 per cent compared to 29 per cent during the first half of 1977 and the share of the Socialist countries increasing to 60 per cent from 58 per cent.

The share of Third World countries also declined to 11.8 per cent in the first half of 1978 from 13 per cent in the first six months of 1977.

Drive for investment in Ulster

Financial Times Reporter

MR. ROY MASON, the Northern Ireland Secretary, is flying to Tokyo next week as part of a new drive to attract foreign investment in Ulster.

The move follows a visit to the province this week by the Japanese Ambassador, during which he studied investment prospects.

Officials at the Northern Ireland office said that the relative quiet has begun to make it possible to seek new investment. Some American companies already have announced their intention of setting up factories in Ulster.

Mr. Mason recently visited the U.S. and his Minister of State visited West Germany and Scandinavia as part of the renewed push for investment in Northern Ireland.

Our Own Correspondent writes from Dublin: The Ridge Tool Company of Ohio, in conjunction with the Industrial Development Authority, is to invest over £10m in a new plant in Cork to manufacture pipe-working tools and equipment for international markets.

Initial activities are scheduled to begin in September with full production set for 1982, when the labour force is expected to total 250. Already a number of workers are receiving training.

The company manufactures a wide range of pipe tools under the brand names "Ridgid" and "Kollmann." It has manufacturing and warehousing locations in 11 sites outside the U.S., and its sales totalled £1m in 1977.

UK recovers ground in France

BY DAVID CURRY

PARIS, August 30.

BRITISH GOODS recovered some of their lost market share in France during the first half of this year. The UK share of the French import market improved to 5.6 per cent (5.2 per cent in 1977) and if they continue at the present rate, Britain should notch up sales of around £2.49bn this year, some £343m better than last year.

However, this will not be enough to close the trade gap, which was £284.6m in the first half of this year, compared with almost £250m for the same period of last year. Nonetheless, some 81.4 per cent of French sales to Britain were covered by transactions in the opposite direction, compared with less than 68 per cent in 1974, when the British market share reached its low point of 4.4 per cent.

If the figures are adjusted to make exports to France (reckoned in f.o.b.) and imports (c.i.f.) comparable the cover is closer to 90 per cent.

British officials are hoping that next year, aided in some measure by the build-up in sales of crude oil, UK penetration could reach 5.9 per cent, which would translate into sales of just short of £3bn, allowing for a 10 per cent inflation rate.

Exports of crude moved from a fairly negligible £10m in 1975 to £92m last year, and were approaching £46m, at the half year in 1978. Agricultural products were another strong factor moving from £226.5m last year to some £160m in the first six months of this.

These two areas, together with components, are expected to be the best growth sectors over the coming yars, particularly if the EEC can agree a sheepmeat regime which will favour exports of mutton and lamb to the highly protected French market.

French strength continues to be in cereals and in motor vehicles, where their sales between 1975 and 1977 moved from £165m to £361m, while British sales to France last year were only £137m.

Despite the improved performance, Britain is very much the laggard amongst France's EEC trading partners, except for Denmark and Ireland. Last year, Germany took 18.5 per cent of the French market, with sales worth almost £7.5bn, while Italy took 9.6 per cent; Belgium/Luxembourg 9 per cent; and Holland 6.1 per cent. Only the U.S. (6.9 per cent) and Saudi Arabia (6.1 per cent) figured with the EEC countries amongst the top seven suppliers to France.

The period of British improvement has been one of steady depreciation of the pound against the frank. From £1=Fr 9.51 in 1975, it declined to £1=Fr 8.53 in March of this year.

El Al charter subsidiary

By L. Daniel

TEL AVIV, August 30.

EL AL, the Israeli airline, has formed a fully owned subsidiary company for charter flights which it will operate as from this autumn.

Initially the flights will be from Britain, various cities in Germany, Italy and Greece. In addition to its own fleet of Boeings, El Al will have at its disposal two BAC one-elevens hitherto used by Arkia, the domestic airline.

The El Al management is also awaiting approval by the Ministerial Economic Committee and the Knesset Economic Committee of its recommendation that El Al buy two Airbus airlines. This will be the first time that El Al buys non-American if approval is granted

● Wong Sulong writes from Kuala Lumpur: Malaysian Airline System, MAS, announced today it would buy three European Airbus airliners to replace its present fleet of Boeing 707s. The cost of the three aircraft, including engines, spares and related equipment was estimated at $115m.

EEC quotas against Asian shoes urged

MILAN, August 30.

ITALIAN SHOE exports slumped 7.2 per cent to 121.99m pairs in the January-May period this year from the year earlier and Italian makers, among the world's largest, again urged EEC quotas on Asian exports in order to prevent a further slump of their sales in the remaining months of the year.

Sig. Odoacre Mercatanti, director of the Italian Association of Shoe Manufacturers, told the annual assembly that the present situation was "worrying" following slackened demand and growing competition on the domestic and foreign markets.

He emphasised that under such conditions, control by EEC regulations on imports from Taiwan and Korea was an unavoidable and urgent measure.

Sig. Mercatanti said the flow into Europe of the Asian surplus of shoes, as a result of quotas on Asian shoes imposed in the U.S. and Canada, would greatly hurt the Italian shoe industry.

"If bilateral negotiations with Korea and Taiwan are started, for a voluntary cut of their exports to Europe, then the situation of the national makers could be greatly relieved," he said. Such negotiations might be started next autumn, he disclosed.

While urging quotas on Asian imports in Europe, Sig. Mercatanti criticised the long-standing Japanese quotas on Italian shoes which are cutting to 300,000 a year a potential market of 7-8m pairs for Italian makers."

BERLIN FAIR

Emphasis on Third World trade

BY MARGARET HUGHES

BERLIN, August 30.

BERLIN'S 60th Overseas Import Fair was opened here today by Dr. Detlev Rohwedder, Secretary of State at the Bonn Economics Ministry.

With Partners for Progress as the theme, the Berlin fair aims to promote trade between Western Europe and overseas countries, with the emphasis on developing nations. It is supported by the EEC Commission and the International Trade Centre in Geneva. Some 1,000 organisations are participating from 60 countries in Asia, Africa, Latin America and the Near and Middle East, as well as exhibitors from the U.S. and Japan. The exhibits are mainly consumer goods, such as textiles, carpets, leather ware, handicrafts, jewellery and food, though there are some more technical items, such as electronics products.

Given that most participants are from the developing nations, the need to maintain free trade and keep the industrialised markets open to exports from the Third World inevitably dominated the opening speeches. Dr. Rohwedder placed particular emphasis on the importance of a North-South dialogue. This, he said, was "indispensable" for the improvement of world economic relations.

Dr. Rohwedder stated that the intensification and further growth of trade relations with the developing countries offered the best chance for their integration in the world economy. Exports were by far the most important source of foreign currency, and provided much more dynamic growth than aid. It was a prerequisite for the industrialisation of developing countries, he said, that the industrialised nations opened their markets further for products of the developing world and accepted the resultant structural changes.

The developing countries had built up their industrialisation largely with capital and know-how from the Western industrialised nations on the assumption that in the long term they would be able to integrate themselves as partners on an equal basis in the world economy.

Trade policy with regard to the developing countries was, therefore, "a test of the credibility of industrialised nations. If industrialised countries restrict access to their markets, then this can only be interpreted as a repudiation of the aim of the economic development of the Third World. On the other hand, a decision not to close markets represents an important prerequisite for giving the developing countries a chance to make a suitable contribution to the general restimulation of world trade in increased growth."

He placed particular emphasis on the expansion of special treatment for developing countries, such as improvement of preference schemes, special advantages favouring the poorest countries, and technical assistance for the better utilisation of preferences.

This view was endorsed by M. Michel Hauswirth, Deputy Director for Development at the EEC Commission, who said that one of the aims for 1979 must be to improve utilisation of preferences through introduction of differentiation to allow the poorest countries to take greater advantage of the system. So far only those in a more favourable financial position or those with a more dynamic economy had utilised the opportunities fully.

In addition, trade must be actively encouraged, and the EEC regarded the Overseas Import Fair as "one of the preferred places" for helping to promote trade and economic development. As a result, more than 20 of the countries represented at the fair have received financial support for their participation from the EEC.

M. Hauswirth admitted that competition from exports from developing countries represented a major problem for the EEC in terms of economic crisis, but this should not jeopardise freedom of trade. He said the solution to these problems must be sought in an open dialogue between the partners involved.

The UN Secretary-General, Dr. Kurt Waldheim, endorsed the move for greater exchanges among developing countries to improve their economies, reports K. K. Sharma from Buenos Aires. Speaking at the opening of a two-week conference on technical co-operation among developing countries, he said there was a need to accelerate exchanges so that institutional facilities were available for increased trade, monetary development and financing arrangements.

HOME NEWS

Thatcher starts Scottish campaign

By Ray Perman, Scottish Correspondent

MRS. MARGARET THATCHER arrived in the Scottish Borders last night to begin a tour which effectively opens her party's election campaign in Scotland, where significant Tory gains are considered possible.

Although lagging badly behind Labour in the opinion polls, the Conservatives could profit from the slump in support for the Scottish Nationalists and win back five or six of the nine seals lost to the Nationalists in 1974.

Also, in Berwick and East Lothian, vacant since the death of Professor John Mackintosh, Tories believe they have a chance of regaining the seat lost in October, 1974, when Labour's majority was 2,740.

Mrs. Thatcher will spend most of tomorrow in Roxburgh, Selkirk and Peebles, seat of Mr. David Steel, the Liberal leader, where the Conservatives hope to overturn the 7,433 Liberal majority.

Richard Evans, Lobby Editor, writes: "The Conservatives can afford to care, Labour can't." was the theme last night of the third in the series of highly professional party political broadcasts made for the Tories by Saatchi and Saatchi, Garland Compton.

Instead of an outright attack on Labour policies, the broadcast acknowledged that the Government meant well and was full of good intentions, but had not developed the resources to pay for improvements in social services, education and health care.

A related message was that since the war every Labour government had increased income tax, whereas every Conseravtive government had reduced taxes while increasing social services.

Mr. William Whitelaw, deputy leader, summing up the broadcast, said that the Labour Party was always talking about caring but talking was not enough.

It was a fundamental part of Conservative policy to encourage people to look after themselves to the best of their ability, but those who were too young, too old or too sick were entitled to expect all the help and compassion that we could give them, he added.

Today the Tories will launch a cinema advertising campaign.

Lords urge changed attitude to boycott

BY MAURICE SAMUELSON

THE GOVERNMENT is accused today of condoning some of the most discriminatory aspects of *the Arab boycott while* verbally deploring it. The charge comes from a Lords Select Committee, which proposes sweeping changes in Government attitudes towards the boycott.

The committee wants the Foreign and Commonwealth Office to cease authenticating negative certificates of origin required by some Arab countries, and calls these documents "among the most discriminatory forms of the boycott mechanism."

The Foreign Office has so far resisted calls for this kind of reform.

Public funds should also be withheld from companies seeking assistance to secure contracts with boycott clauses.

This was the only suggestion on which the committee's nine members, headed by Lord Redcliffe-Maud, were not unanimous.

Britain should back an EEC initiative for community-wide action against the Arab boycott and there *should be stronger* diplomatic intervention with Arab States when British companies *are in trouble with the* boycott.

The committee spent four *months studying the Foreign* Boycotts Bill, sponsored by Lord Byers, the Liberal peer, who was also one of its members.

It decided unanimously not to send *the Bill back to the Lords* for a Third Reading, because of its potential damage to Arab-British trade and the widespread hostility to it among British businessmen.

But it has left open possible future legislation if the *measures proposed do not reduce* the boycott's impact.

The Byers Bill was modelled on the 1977 Amendment to the U.S. Export Administration Act.

But Lord Redcliffe-Maud said yesterday that the committee had been unable to draw conclusive lessons from the U.S. experience, even though the "Cassandra-like prophecies" of the dire effects of U.S. legislation had not materialised.

Interests

In the past, Governments have verbally deplored the secondary *and tertiary aspects of the* Arab boycott, telling companies to decide for themselves how to *act on their commercial interests.*

The committee says that Parliament and the Government "*should set the political context*" in which companies make such decisions.

The boycott does not necessarily seriously damage trade prospects, and companies are urged to pursue all business opportunities with courage and *enterprise. The* Government should help by assisting trade promotion, rather than by discouraging *compliance* with the boycott.

It should also urge companies receiving boycott requests *to* report them voluntarily to the Trade Department.

This could enable publication of statistics to monitor the boycott, but otherwise information could remain confidential.

The proposal on withholding public funds is tentatively phrased, reflecting disagreements in the committee.

Two members, Lord Boyd-Carpenter, a former Tory Agriculture Minister, and Lord *McCarthy, a Nuffield* don who takes the Labour whip, said that it would reduce Britain's export *potential and penalise companies* legitimately exercising their commercial judgment.

The majority says that companies needing help to secure a contract including boycott conditions, *they should* go to the open market, not the taxpayer, for that money.

Report of the Select Committee on the Foreign Boycotts Bill: (SO): Report and Minutes £2.60; Minutes of Evidence £4.60.

Editorial Comment Page 14

Jobless rise 'not so sharp'

BY DAVID FREUD

THE SHARP rise in unemployment over the last two months may have been largely artificial, according to Economic Trends, published today by the Central Statistical Office.

Standard statistical adjust*ments* made to eliminate seasonal factors seem to be out of date because of changes in *the labour market structure.*

This means that there has been a summer unemployment "hump" *in 1976 and 1977 in the* seasonally-adjusted total, excluding school-leavers, which is *officially* regarded as the *best* indicator of the underlying trend.

For this reason the present rise in unemployment is thought to be due largely to inadequate seasonal adjustment and mirror the experience of the previous two summers.

The article, which describes an investigation by the research branch of the Statistical Office into the problems of adjusting the figures, concludes that if the components were separately adjusted the summer total "would rise less sharply, if at all."

Separate adjustment would even out the summer humps, although the decline over the nine months from last September would have started later and have been less steep.

The Statistical Office says that the studies described in the article do not imply that changes should be made in the methods of seasonal adjustment used by the Department of Employment.

Sea oil output falls

FINANCIAL TIMES REPORTER

DAILY CRUDE oil production from the UK sector of the North Sea fell by 2 per cent in July compared with the previous month.

The drop in average production last month by 21,827 barrels a day was largely due to a cut in supplies from Shell/Esso's Auk Field and Mobil's Beryl Field, to allow *routine summer* maintenance work on production platforms.

Average daily production during *July* was 1,092,328 barrels a day, compared with 1,114,155 barrels a day in June.

Total production *in July* was 4,518,550 tonnes. This brings the total for the last 12 months *to 45,379,475 tonnes of crude oil,* which takes the UK about half way towards reaching self-*sufficiency* in crude oil.

Building material sales up 21%

By Michael Cassell, Building Correspondent

SALES of building materials in the UK were nearly 21 per cent up *in June* compared with the same month last year, according to the National Federation of Builders' and Plumbers' Merchants.

Sales by builders' merchants in the 12 months to the end of June were nearly 5 per cent up on the previous year.

The federation said that the more buoyant picture was evident in all regions, with particularly bright spots in the Midlands and the North West.

Mr. Reg Williams, director of the federation, commented: "The trend is most encouraging. For the third month in succession all regions have shown an improvement.

"At this time of year one would expect an increase in building activity as contractors take advantage of the fair weather and longer hours of daylight — but the increase in these figures exceeds the usual seasonal upturn."

The federation's figures reflect the trading position of 95 per cent of Britain's builders' merchants and confirm a brighter picture for construction output. Work levels are expected to rise by about 2-3 per cent this year, the first increase in output since 1973.

More home news on Page 10

Top steel finance man for GKN

By Roy Hodson

MR. WILLIAM G. McLUSKIE, a finance controller at the *British Steel Corporation, is* leaving for a financial post with GKN, the private sector steel-*makers* and engineers. British Steel said last night that the move was "a logical business *promotion.*"

Mr. McLuskie, who has special responsibility for BSC's Treasury *operations, is one of three* controllers responsible to Mr. Claude Osborne, the BSC director of *finance, who in turn reports to* Mr. Frank Holloway, the managing director for finance.

His departure is the latest in a series of middle and senior management resignations from *British Steel.*

The trend has gathered pace in recent months as Sir Charles *Villiers, the chairman,* has made clear that it is the corporation's policy to make drastic reductions *in white-collar staff as* works are closed and shop-floor jobs lost.

Some 15,000 steel working jobs have gone in the last year.

A number of head office departments providing services for the steelmaking divisions have been run down to staffing levels *only half the size of five years* ago.

Some of the biggest staff reductions have been in the finance department, the legal department, and information services.

Wherever *possible specialised* work is being contracted to outside consultants. For instance the BSC legal department will cease handling its own conveyancing.

Iberia predicts 40% loss in Gatwick move

By James McDonald

IBERIA, the Spanish airline, says it might lose at least two-fifths *of its total revenue from British* traffic next year as a result of the British Government's *decision to transfer scheduled* air services to the Iberian peninsula—Spain, Portugal and *Gibraltar, and their islands*—from Heathrow Airport to Gatwick on April 1.

In a full year the loss in revenue of UK-based business might reach three-fifths, Mr. *Mariano Salinas, Iberia's general* manager for the UK, Eire and Iceland, said in London *yesterday.*

Although the matter was to be discussed by the British and *Spanish* Governments, Mr. Salinas emphasised that Iberia was not a "100 per cent" holi*day airline: 57 per cent* of its traffic revenue came from business travel and freight. Much of that could not be accommodated at Gatwick.

Terry Kirk

At the conference (from left): Mr. E. H. Boullioun, Mr. E. Rubython and Lord Beswick

French air chief attacks Britain over U.S. link

FINANCIAL TIMES REPORTER

LEADERS of the British and French aerospace industries disagreed *yesterday over the* extent to which co-operation with the U.S. would be in Europe's long-term interests.

General Jacques Mitterrand, chairman and chief executive of *the French Aerospatiale group,* told delegates at the Financial Times World Aerospace Conference in London that it was unrealistic for Europe's aerospace industries to attempt compromise on *future projects* by "*playing* European in one programme and playing American *in another.*"

Europe's makers must either develop their family of aircraft or join a U.S. *maker.* There could be no compromise. Two aircraft, even of different sizes, would compete.

The comments were a thinly disguised attack on possible two-fold collaboration by Britain with U.S. and European aircraft manufacturers.

But Lord Beswick, chairman of the nationalised British Aerospace Corporation, said that *when international collaboration* was complete "the potential of Europe will be linked at important points with the immense resources of the U.S."

Lord Beswick believed it *wrong to develop a fortress* Europe or a fortress America mentality. He had always *preached* that narrow nationalism was incompatible with the meaning or purpose of *air transport.*

General Mitterrand said that there were only two possible *choices for the European aerospace industries.* The more challenging option required a finan*cial effort that did not exceed* national capabilities.

The risk was that its success would *depend on penetrating a* market held strongly by the U.S. However, sales of the Air*bus suggested that such an* objective was not stupid, he said.

Sub-contractor

The second solution for future projects *was safer* in that it took advantage of the strong commercial position of U.S. aerospace *companies. However, that* advantage would have to be paid for. A European partner would very *probably be seen as a junior* partner limited to the role of risk-sharing sub-contractor.

France, West Germany, Spain and the Netherlands had chosen the European game when they decided to extend the Airbus family to the new A130.

Britain had been invited to join that programme and General Mitterrand said: "We should know in the very near future if our British friends have chosen to accept this invitation or join a U.S. partner."

Lord Beswick, in a prepared speech after the general's comments, reaffirmed that British Aerospace had decided in principle to opt to join Airbus Industrie. There would not be a short-term advantage in doing so, but there might be long-term gain.

British Aerospace wanted influence as a partner in a continuing civil programme as well as in a specific new civil project.

Collaboration was not to be confused with sub-contracting. Britain wanted and welcomed the *opportunity* fully to exploit its proven civil aerospace capability.

Last December, Lord Beswick signed a memorandum of understanding with Aerospatiale, the German M.B.B. and the German-Dutch VFW-Fokker. That confirmed plans to continue definition of the B10 Airbus and studies into a 120 to 160-seat variant.

Those discussions had continued, but agreement on a matter involving many millions of pounds and affecting British aerospace policy for the next 20 to 30 years must take time, he said.

Lord Beswick gave warning that any imminent decision by the British Government about a commitment to future collaboration would be significant only if matched by similar action in West Germany and France.

He emphasised the strength of British Aerospace. On vesting day, when private British aircraft companies were formally taken into public ownership, the order book stood at £1,500m. It now stood at £2,500m and was still rising.

However, four-fifths of the orders were for military aircraft and weapons and 69 per cent of the total was exported. British Aerospace wanted to improve the balance between the military and civil side.

Speaking on aero engines, Sir Don Pepper, vice-chairman of Rolls-Royce, said that the greatest new developments were taking place in designs for aircraft with 230 seats and fewer. The focus had for long been on the 160-230-seater.

Below the 30,000-55,000 lb thrust bracket, new engine developments were called for. In the long term, those would be new engines, with derivative engines more numerous in the short term.

Sir Donald predicted that supersonic flight would reach profitable levels of performance from continuing research. Routine four-hour flights over 6,000 miles would be possible in the longer term.

FT WORLD AEROSPACE CONFERENCE

Less demand for speed, says head of Boeing

MR. TEX BOULLIOUN, President of Boeing, told the conference that speed was no longer one of world airlines' prime requirements.

Additional range also had limited application. Payload improvements were always needed, but Mr. Boullioun said there was no great demand for aircraft much larger than those available to-day.

World airlines were demand*ing "every ounce of improve*ment in aircraft operating efficiency that a manufacturer *can squeeze from his design.*"

Manufacturers, suffering under inflation since the airlines' last spending spree, had to produce aircraft with running costs low enough to offset the increase in initial investment—a formidable task for the makers. Design emphasis concentrated entirely on refinement.

Boeing planned two or three new aircraft while present production lines were filled and production rates rising. Airlines wanted to be able to match their markets ever more closely with aircraft.

Air traffic was growing at an average world rate of 6 to 7 per cent a year, a rate that would continue for the next decade, Mr. Roy Anderson, chairman of the Lockheed Corporation said. That new market would contribute greatly to the $100bn aircraft equipment market expected until 1990.

That growth, Mr. Boullioun said, would create an "awesome, traumatic, profound and immense" impact on earthbound portions of society. Threats from conservationists to current airline services and future expansion had to be countered with wiser policies.

"We must give greater recognition to the impact we are causing upon other aspects of society, and, more important, prepare those leaders who must manage solutions."

The world air travel industry was *overwhelmed by structural* and political changes. Manufacturers and all interested in the *industry must act together, or* others would decide the industry's future. The industry's *basic foundations must be re*designed more permanently.

The main object must be to establish a *strong financial basis* for operations. The politics of low fares had to be regulated by the rationale of adequate *yields,* and subsidies had to be minimised.

A second object must be improvements in passenger handling and security. The benefits and appeal of air travel were being lost in the discomfort of the ordeal, Mr. Boullioun said.

There was a case for governments extending the special credentials of diplomats to enable more qualified travellers to move more freely with less clearance processing.

Credit plans for High Street

BY OUR CONSUMER AFFAIRS CORRESPONDENT

HIGH STREET retailing groups are planning to cash in on the consumer boom by offering customers *special* credit card facilities.

Already, Fine Fare, the fashion group Etam, and the Lasky's audio chain, are planning to introduce pilot schemes before the end of the year. And Mr. Leslie Porter, Tesco chairman, said yesterday that Tesco was also considering its own schemes.

The moves to extend High Street credit facilities follow closely on Marks and Spencer's decision to introduce a trial credit scheme in six stores from the end of this week. Several men's clothing stores such as Hepworths, Burtons, and Harry Fenton have operated their own credit card schemes for some time.

But with the boom in consumer spending, retailers are anxious to ensure that customers have every opportunity to *finance their spending through* credit schemes.

The Bradford-based Unicredit company, an offshoot of the Provident Financial Group, is spearheading the drive to provide High Street retailers with their own credit cards. Unicredit offers a complete package for *retailers waiting to introduce* their own card.

Fine Fare, one of Unicredits customers, plans to introduce its own credit card system into 20 of its stores from early November.

Customers will be able to spend up to an agreed credit limit, according to how much *they are prepared to pay* each month. Fine Fare, however, will allow the card to be used only on non-food items.

Etam, the women's fashion group, plans to have credit cards in about half its 100 stores as well as in its new up-market Orlando chain.

Mr. Bryan Cheetham, sales director of Unicredit, said yesterday that a *feature* of the credit cards they provide was that they would be accepted instantly by *stores upon proof of identity.* This was to overcome the often lengthy delays for normal credit *cards while a customer's credit* rating was established.

The amount of interest *customers will pay* on the cards will be at least two per cent and possibly more, according to the *arrangements* made with the retailer.

Barclaycard charges customers only 1.75 per cent on outstanding loans, but takes discount of between two and five per cent from the store.

The Unicredit scheme is likely to prove more attractive to *retailers, who stand to get the* full amount back from the credit card transaction, but less attrac*tive to consumers, who have to* pay more in interest.

The real Cheddar fights its way back

Robert Barclay

Mr. David Higdon (right) during the Cheddaring process

JOHN GRIFFITHS in the last of our Working Britain series finds out about Somerset cheese lore

SOMERSET has its own version of cheese lore: the origin of the Cheddar species, so the story goes, can be traced back to the interior of a Cheddar Gorge cave. On a summer day in the mists of time, it is said a young shepherd, tired from trailing his charges through the spectacular two-mile crease in the Somerset countryside, threw himself down for a nap without touching his bread, or the milk stowed in a newish pig's stomach vessel.

The boy slept on, the pig's stomach seeped its rennet, the milk mutated, and presto—lunch for a hundred generations of ploughmen.

As with most folk tales, there is probably a crumb of truth there somewhere. But the fact is that in the world's family of cheeses, Cheddar is almost an infant.

Cheese has a history extending back at least to classical Greece, when Olympic athletes trained on the goat's milk variety with its "presence" which can drop an ox. Cheddar, on the other hand, has been made in the countryside surrounding the Gorge *only since* the late 15th century.

Since then, and particularly during this *century, the manu*facture of the nutty, densely-textured cheese has spread around the world. The Canadians are particularly good at making it; there is even a Chinese Cheddar. But, say the core of farmers producing the cheese by traditional methods within a 30-mile radius of the Gorge, none of it is quite like the real thing.

John Green, whose Mulberry Farm, near Glastonbury, turns out an average of a ton a day of farmhouse Cheddar, believes that the answer lies largely in the soil: that the limestone of the region imparts to its grass and water a fine balance of trace minerals which leads in turn to a milk particularly suited to the Cheddaring process.

It is all highly subjective, of course. But with the help of the Milk Marketing Board the farmhouse Cheddar-makers, who were down to little more than a handful in the late 1940s, have secured a firm niche in the UK market for a product which, at a price premium which may vary up to 15 per cent on factory-produced Cheddar, sells itself on an image of extra flavour and sophistication over the factory cheeses.

Thus of the 166,000 tons of Cheddar produced in the UK last year, some 17,500 tons came from the 28 farmhouse makers—*24 of them in the Avon and* Somerset areas, two in Dorset and two in Devon. Each draws its *milk from its own and neigh*bouring farms. Effectively, they are small co-operatives.

Between them they *process* some 33m gallons of milk a year from a total of 300 farms, and despite the depressed cheese market have tended to butt against the limit of their Milk Marketing Board-imposed quota.

Their representative body, the Cheddar Farmhouse Cheesemakers' Association, met this week to discuss ways in which they might get the quota increased, but given the state of the market were not over-*optimistic about it happening.*

Farmhouse production remains a far cry from that in the large Express Dairies, Unigate and Milk Marketing Board creameries, at which milk enters one end of devices like the Cheddarmaster and sees the light of day again only as pre-packed 20 kilogramme blocks.

But even in the farmhouse creameries techniques have come a long way from the days when the grandmother of John Alvis, chairman of the cheesemakers' association, used calves' stomachs to get cheese-making under way. Then the process was somewhat haphazard.

"There are still a hundred things that can go wrong even today; cheese, after all, is a living thing," points out Mr. Alvis. But the inability to control temperatures, changing cows' diet and hygiene problems—all of which can have a tremendous impact on how the cheese turns out—conspired to make the *cheese-maker's life an* adventurous and unpredictable one.

Pasteurisation—"that knocks *out 90 per cent of our problems* for a start," says John Green—and a variety of mechanical aids *now help keep the Cheddar on* the straight and narrow, although these days it has got six lanes and heads due east to, notably, Harrods.

The cheese-maker's day starts early: on John Green's farm, at about 5 a.m. The milk collected by a 1,500-gallon tanker from Green's neighbours, plus that from his own herd of 200, is passed through the pasteuriser and into the cheese vat, a stainless steel, Brobdingnagian bath-*tub which can hold 2,500 gallons.*

Strater milk, containing a bacterial culture to increase the milk's acidity—in other words, to turn it sour—is added, and with the milk at blood temperature the further addition of rennet coagulates it into a junket. Steam passes through the side of the tub to heat the junket and automatic knives then slice it into small pieces—"chop it too fine, though, and you can lose the batch," warns Green.

This serves to separate the curds from the whey; the curd, the embryo cheese, goes into a large cooling tray, the whey is drained off and will soon be served up to the local pigs.

It *is at this stage that the* actual "Cheddaring" takes place: Green's staff of three—his *son has also joined the business*—cut the curd, now looking like a giant portion of scrambled egg, into oblong *blocks which are* turned by hand end over end, to help them compact and to drain *off the remaining whey.*

Three hours after the process started "you know you've got a *good cheese if the curd at this* stage has the consistency of a nice bit of chicken breast," says Green. *Again the curd is broken* up, acidity levels are checked, and all being well the curd is *packed into tub moulds which 24* hours later will turn out a cheese-cloth-wrapped 60lb cylinder of *young Cheddar.*

The process is similar at the other farmhouse cheese-mkare's creameries, although even among the traditionalists John Green's great rounds of cheese have been giving way rapidly to the more easily handled 20kg blocks.

Blocks now account for 70 per cent of the farmhouse makers' production, and John Alvis, whose own creamery turns out 7,000-8,000 lb of block Cheddar a day, insists that the difference between *farmhouse and factory* Cheddar lies in its handling and the individual attention it receives rather than the form it finally takes.

John Green is not so sure. With the traditional barrels of cheese the maturing process—the average age for a good mature Cheddar is nine months or so—takes place in the open air, the cheeses need to be turned almost daily and there is a weight loss of about 10 per cent between manufacture and maturity. With the block cheese, maturation takes place entirely within a sealed polythene wrapping.

Cavity wall standards planned

BY MICHAEL CASSELL, BUILDING CORRESPONDENT

MOVES TO improve standards in cavity wall insulation were announced yesterday by the British Standards Institution.

The activities of some foam insulation operators have, in the past, provoked widespread criticism from the public and other insulation specialists.

Until now, there have been no British Standards on the cavity wall insulation, but the Institution yesterday published a standard and a code of practice to cover this work. It also plans to introduce a scheme for registration of companies involved in cavity insulation.

The Institution said: "These new measures should not only set the standards for the manufacture and installation of the basic materials but should also ensure that work carried out by BSI-certified firms will be in strict accordance with the specifications."

The scheme has been devised in consultation with the Department of the Environment, the Agrément board, the National Cavity Insulation Association and the Structural Insulation board.

It is estimated that 40 per cent of UK homes have external cavity walls and that more than a third of total heat loss in the average house escapes through the walls.

Foam insulation, which much of the past criticism concerned involves the injection of a chemical mix which fills the cavity and hardens into urea-formaldehyde foam.

The Institution's standards will cover manufacturing and installation aspects and will require detailed records to be kept of all checks and tests carried out during every stage of the contract.

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HICKING PENTECOST & CO LTD

GROUP SECRETARY

Hicking Pentecost & Co Ltd is a Public Company in the Textile Industry. The Group operates eleven factories with fifteen hundred employees and has a turnover in excess of nine million pounds.

A Solicitor, Chartered Secretary or Qualified Accountant aged 30-45 is now required to fill the post of Group Secretary. The Group Secretary is based in Nottingham and is directly responsible to the Chairman of the Group for the control of secretarial, share registration, pension and insurance work for the Company and its subsidiaries. He/she is also required to advise the Management on legal and property matters.

The commencing salary will be about £7,000 per annum and there will be the use of a company car. Applications should be made in writing giving full details of education, qualifications, experience and salary required to the Group Secretary at Queen's Road, Nottingham.

Orion Bank c. £9,000

Manager— Accounts Department

An Excellent Management Opportunity in a Dynamic Environment

Orion Bank is a multi-national investment bank in the City which has gained an enviable reputation within the international sector.

Following recent internal re-organisation, the Bank requires a mature disciplined person with the ability to lead and manage an expanding Accounts Department with the emphasis on proven managerial ability.

Candidates should possess a comprehensive knowledge of accounting systems within an international Banking environment, a relevant professional qualification, and should demonstrate a sound understanding of management accounts preparation, computerised accounting systems, and possibly Eurobond accounting principles.

In addition, the successful candidate, who will probably be aged 35-45 years, must have the personal attributes essential to lead and motivate a team within an enthusiastic and dynamic atmosphere.

This is a managerial appointment, and the importance attached to this function by the management is reflected in the competitive salary offered, together with an attractive fringe benefits package which includes preferential house loan facilities, non-contributory pension and family medical insurance.

Applications, which will be treated in strict confidence, should be accompanied by a curriculum vitae and addressed to:

The Personnel Director,
Orion Bank Limited, 1 London Wall, London EC2Y 5JX
Tel: 01-600 6222

ORION

Management Accountant

As a result of a recent promotion, a vacancy now exists within our Finance Department for an experienced Accountant well-versed in management accounting, budgeting and tariff calculations. The main responsibility of the job is to help one of our major departments to prepare budgets, five year plans and cash forecasts, interpret monthly reports, monitor and revise tariffs and set standard labour costs. There is also involvement in the preparation of capital expenditure proposals, and, as the link between Finance and Settlement Services Department, in advice on financial policy, preparation of ad hoc reports on accounting matters, and interpretation of guidelines and instructions.

The job calls for a qualified accountant (ACA, ACMA, ACCA), probably in his/her thirties, and capable of accepting a high degree of independence.

Salary is likely to be in the region of £8,500. Other benefits include non-contributory pension, life assurance and disability schemes, free membership of BUPA, LVs, five weeks' holiday and season ticket loan.

Please telephone for an application form, or write fully to Phil Mountford, Manager, Personnel Services, The Stock Exchange, London EC2N 1HP (01-588 2355 ext. 8086).

The Stock Exchange

Financial Controller

S.W. Essex. to £9,000 + car.

The very successful transport services subsidiary of a major UK group seeks a Controller. This is a total modern controllership, with minor exceptions. There is considerable scope to improve operating efficiency and profitability. Existing staff (and EDP) support is good. Salary will be augmented by a company car and 'leased' car if required.

Candidates should be Chartered Accountants aged 27 or over. Essential experience is (a) the preparation of statutory accounts and (b) performance reporting and cost control in a reasonably advanced environment. The company is a recent group acquisition so it is not yet possible to forecast movement to the parent company. However, planned local growth should provide more than enough in the way of prospects. This is an equal opportunity appointment.

For a fuller job description write to John Courtis & Partners Ltd., Selection Consultants, 78 Wigmore Street, London W1H 9DQ., demonstrating your relevance briefly but explicitly and quoting reference 795/FT.

JC&P

INVESTMENT MANAGER

Fidelity Management are seeking an experienced Investment Manager for its London Office. An oportunity arises for a man or woman who has had several years' solid experience of managing internationally diversified portfolios on behalf of institutions. Specific responsibilities will include coverage of the major Continental European markets with special emphasis upon equities. This is an opportunity to join a major investment management firm at an exciting time in the development of its international business. An attractive compensation package to include salary, bonus, pension and other fringes is wide open to negotiation.

Applications, which will be treated with the strictest confidence, should be submitted to:—

Jim Tonner,
Fidelity Management & Research (U.K.) Ltd.,
64 Cannon Street, London E.C.4.
(Tel: 01-248 4891.)

C&L

Cambridgeshire Up to £12,000 + car

FINANCIAL DIRECTOR

The Client The potential of this rapidly expanding company, which manufactures and markets a well known consumer product, the leader in its field, is demonstrated by its dramatic growth over the past 5 years. From sales of less than £0.2 million in 1973 turnover is currently running in excess of £6.5 million a year. Profits have been consistently good and prospects of substantial future growth, both at home and overseas, are excellent.

The Job Reporting to the Chief Executive of the U.K. division with a functional link to the Group Financial Director, responsibility is for the financial and management accounting functions. The initial emphasis will be on ensuring that standard costing systems are properly developed and implemented.

The Candidate Must be a qualified accountant with substantial production and management accounting experience, gained preferably in an engineering environment. Preferred age, early 30's. Male or female. A mature and lively approach with an ability to motivate people and get things done is essential.

Brief but comprehensive details of career and salary to date, which will be treated in confidence, should be sent to J. G. Cameron, Executive Selection Division at the address below. Please quote reference CF344 and include if possible, a daytime telephone number at which you can be contacted.

COOPERS & LYBRAND ASSOCIATES LTD.
Management Consultants
Shelley House, Noble Street, London, EC2V 7DQ.

financial controller

Volvo Group, part of the Lex Service Group, comprises Volvo Concessionaires, sole UK importers of Volvo cars and parts, and Lex Brooklands, a chain of retail Volvo distributors. It has an annual turnover in excess of £100m and an impressive growth and operating record.

As a result of internal career advancement, we are seeking to appoint a Controller who can demonstrate an outstanding financial track record, good business acumen and who has the potential to progress to the highest levels within the expanding Lex Service Group.

The Controller will be responsible for the development of financial policy within Volvo Group and for providing a financial control and information service. He or she will advise and assist the Group Management on all financial matters and negotiations, with particular regard to the optimisation of profits and cash flow. He or she is also responsible for the DP function, which is an integral part of the daily operation of the business, for controlling the Capital Project Appraisal System and for foreign currency dealing.

Aged 33-40, candidates, male or female, should be qualified chartered accountants with a successful career in financial management. Previous line responsibility for a DP activity is highly desirable. It is unlikely that anyone earning less than £13,000 p.a. would have the appropriate level of experience for this important position.

Benefits include a Company car, B.U.P.A., 5 weeks' holiday and non-contributory pension and sickness schemes. The position is based at High Wycombe, Bucks and generous relocation expenses will be given where appropriate.

Please send a detailed qualification and career profile, obviating the need for an application form, to:

Mr R J Tidey
Group Personnel Manager
Volvo Group
Volvo House
Lancaster Road
Cressex Industrial Estate
HIGH WYCOMBE
Bucks

VOLVO

GENERAL MANAGER

Large Trading Group in Middle East

An opportunity exists in the Middle East for an outstanding senior executive of genuine provable ability with a track record of at least 15 years in management of trading or similar entrepreneurial concerns.

Candidates must have a wide ranging knowledge of all aspects of international trading and particular skills in organising and running a multi-divisional company with branches.

The post will be that of General Manager and the rewards will be extremely attractive to an appointee of the right calibre.

Terms will include incentive in the form of profit sharing.

Applications in writing with full curriculum vitae to Box A6455, Financial Times, 10, Cannon Street, EC4P 4BY.

Jonathan Wren · Banking Appointments

The personnel consultancy dealing exclusively with the banking profession

CREDIT INSPECTOR to $21,600
100% Travel +100% expenses

A major international bank wishes to recruit a young banker with credit analysis or credit inspection experience to assist in conducting detailed examinations of the bank's loan portfolio throughout its global branch network.

This will include in-depth analysis and evaluation of risk assets; pinpointing undue risks and exposures; recommending corrective action and improvement; and generally assisting in the improvement of credit administration procedures.

The position involves 100% travel; applications are therefore invited from candidates prepared to be fully internationally mobile.

MONEY MARKET Substantial Salary
Negotiable Instruments

An active London merchant bank seeks to expand its already considerable dealing operations by establishing a Negotiable Instruments desk within its Money Department.

This opportunity is open to a person with four or five years dealing experience in the Dollar CD, FRN or Eurobond markets. To an energetic, sales-oriented executive the position offers excellent scope for personal development.

Please Contact: SOPHIE CLEGG or KEN ANDERSON

170 Bishopsgate London EC2M 4LX 01-623 1266/7/8/9

ema

TAXATION SUPERVISOR
Banking

London EC3 c £8500 + major benefits

Our client is a major international commercial banking group with a comprehensive range of activities. The Taxation Supervisor will co-ordinate UK compliance work for the Group, reporting directly to the Group Taxation Manager at their Head Office in the City.

This appointment will suit candidates with wide commercial tax experience, preferably aged 35 upwards. An excellent benefits package includes subsidised mortgage and non-contributory pension scheme. Please telephone or write to Stephen Blaney, B.Comm., ACA, quoting reference I/1734.

EMA Management Personnel Ltd.
Burne House, 88/89 High Holborn, London, WC1V 6LR
Telephone: 01-242 7773

ROWE & PITMAN, HURST-BROWN

Analyst—Food Manufacturing/Tobacco

Rowe & Pitman, Hurst-Brown are seeking an analyst to develop their research effort in these sectors. Applicants should have had at least two years' relevant experience which will probably have been gained either in stockbroking or with a major financial institution.

We are offering an attractive remuneration of salary and profit sharing bonus, together with a non-contributory pension scheme incorporating good life cover.

Applications in confidence with full curriculum vitae to:—

P. N. Smith, Esq., Staff Manager,
Rowe & Pitman, Hurst-Brown,
1st Floor, City-Gate House,
39-45 Finsbury Square, London EC2A 1JA.

ema

GROUP ACCOUNTANT
Recently Qualified

London W1 to £7500 + car

Providing a range of financial, accounting and management services to group companies, the Accountant will also have major responsibilities in the development of group financial control and strategy. Working closely with the young Financial Controller he or she will be involved in systems development, cash management, and the review of potential acquisitions.

A sub-group of a diversified public group, our trading company client has a turnover of £50 million, healthy profits and is growing both organically and through acquisition. Aged 23-26, applicants should be recently qualified chartered accountants preferably with major professional practice experience. Please telephone or write to Davig Hogg, ACA, quoting reference I/1739.

EMA Management Personnel Ltd.
Burne House, 88/89 High Holborn, London, WC1V 6LR
Telephone: 01-242 7773

International Investment Analysis

Bank of America International Limited has vacancies for two investment analysts, specialising primarily in international equity investment—one with responsibility for North American markets and the other for European markets, principally U.K. and West Germany.

The successful candidates will undertake analysis of a wide range of economic and financial trends with view to providing inputs for currency and interest rate forecasts in their respective areas. The major part of their work will be formulation of equity investment strategy, including specific sector and individual stock analysis in each market.

These positions call for considerable adaptability, and a high degree of ability in communication in both verbal and written form. Travel will be involved for both positions.

Age is not a limiting factor, although the age group is envisaged at 24-30; candidates should have a minimum of two years relevant experience with an institution or brokerage house; an economics degree or similar qualification is desirable.

An attractive salary will be offered reflecting experience and ability, and benefits are in line with normal banking practice.

Please send complete career details, in full confidence, to the Director of Research at the address below.

International Investment Management Service
BANK OF AMERICA International Limited,
St. Helen's, One Undershaft, London EC3A 8HN. Tel: 626 2772

Manager–Finance Systems

London, c. £9,000 (incl. bonus) + car

Our client is the highly successful UK subsidiary of a major international corporation involved in the records and music industries. The subsidiary's growth over the past few years has been exceptional and they now employ 1800 and have a turnover in excess of £50 million in the UK. Through creativity and leadership, the successful candidate will identify user needs in financial and management information and control systems, liaise with the accounting EDP functions at the design stage and take full responsibility for the subsequent effectiveness of his/her schemes. Candidates aged 27-30 and qualified accountants must show a broad accounting background with a strong involvement in computerised financial systems. The ability to communicate clearly and influence senior management is essential.

G.E. Forester, Ref: 18167/FT.

Male or female candidates should telephone in confidence for a Personal History Form to:
LONDON: 01-734 6852, *Sutherland House, 5/6 Argyll Street, W1E 6EZ.*

Hoggett Bowers
Executive Selection Consultants
BIRMINGHAM, CARDIFF, GLASGOW, LEEDS, LONDON, MANCHESTER, NEWCASTLE and SHEFFIELD.

RETIRING MANAGING DIRECTOR OR CHIEF EXECUTIVE

desiring further active career is invited to enquire for information re top vacancies in growing international charity. Salary and expenses. London or U.S.A. based. Entrepreneurial ability/management men and affairs indicated. Example: Overseas Project Director, London based, with three overseas visits yearly.

Telephone Founder's Office, 01-493 3397 or 01-499 6652, or write: Help The Aged and associated charities, 32, Dover Street, London W1A 2AP.

Readers willing to help worthwhile cause please draw this advertisement to the attention of recently retired or retiring top businessmen.

Corporate Finance

Hill Samuel & Co. Limited is expanding its activities in the Corporate Finance field in the UK, and as a result, there are two new appointments to be made.
The first vacancy is for a Young Accountant or Solicitor, aged between 25 and 29, with a good honours degree who has had relevant post qualification experience in fields related to Corporate Finance.
Alternatively similar experience may have been obtained in industry.
The second is for an Acquisitions Executive whose responsibilities will include the initial identification of possible acquisitions and any necessary financial appraisal.
Applicants in their mid to late 20's should demonstrate that they have gained sound practical experience either with a firm of stockbrokers or in another financial institution.
An attractive remuneration package will be negotiated including mortgage facilities, BUPA and an excellent non-contributory pension scheme.
Please write with full career details as soon as possible to:–

R. C. G. Gardner, Chief Personnel Officer, Hill Samuel & Co. Limited, 100 Wood Street, London EC2P 2AJ.

All applications will be treated in the strictest confidence.

HS

SENIOR FINANCIAL EXECUTIVE—U.S.

A highly successful and rapidly growing company on the West Coast requires a senior executive with 8-10 years' first-hand experience in the functions of controllership.

Background experience should be international, most probably in a major U.S. consumer goods company, where judgment, integrity and the ability to administrate effectively and to make tough decisions under pressure would have been essential. The accent is upon a strong background in control, but knowledge of the treasury function world-wide would be helpful.

An extremely generous salary in the upper five-figure bracket with additional fringe benefits is offered and, as it is envisaged that the successful candidate will have the oportunity to become the Chief Financial Officer of the company, candidates should have distinct style and an attractive personality as well as the necessary technical competence, initiative and diplomacy.

Please send full details of career background, which will be treated in confidence, to Box A.6454, Financial Times, 10, Cannon Street, EC4P 4BY.

Company Secretary
Designate

For a public company, providing a range of Industrial Services through a group of subsidiary companies both in the U.K. and overseas. The Company Secretary designate will report to the present incumbent and also to the Group Managing Director and will be appointed Company Secretary in due course. Responsibilities include the usual range of company secretarial duties together with the preparation and vetting of legal contracts. This appointment offers the opportunity to make a positive contribution at top level to a corporate management team. Applicants should be qualified Company Secretaries with considerable experience in financial and insurance matters together with a knowledge of group pension schemes. Salary negotiable, together with excellent fringe benefits with Company car, based in a small Head Office west of London.
Preferred age 30-40. Reference 112.

Telephone Philip Egerton on 01-409 0434.

Philip Egerton & Associates
Selection Consultants
178/179 Piccadilly, London W1V 0QP

PANMURE GORDON & CO.

INVESTMENT ANALYST

We are looking for an analyst to join our team covering chemicals, pharmaceuticals and textiles. A university degree (or appropriate professional qualification) and some experience in investment analysis, not necessarily in related fields, are the minimum qualifications required. The successful candidate will be expected to acquire a broad expertise in these sectors and to become a specialist in textiles and fibres.

Applications with C.V. should be made to:
G. F. Hallwood
at 9 Moorfields Highwalk
London EC2Y 9DS

LEGAL AND PERSONNEL ADMINISTRATOR

ASEA Limited, the UK subsidiary of the International Swedish electrical engineering group, has a requirement for a Legal and Personnel Administrator who will report to the Financial Manager and Company Secretary and advise on legal aspects of the Company's work in commercial matters and take responsibility for personnel administration.

This is a new position, based in Central London, and offers a first class opportunity for the successful candidate to become involved in the UK development of the Company and enlarge his or her responsibilities in line with future growth.

The person suited to the position will probably be a qualified Chartered Secretary aged 27-30 with up to date knowledge of commercial, employment and pensions legislation.

An exceptionally generous remuneration package, with additional large company benefits, is negotiable.

Please write in the first instance to: N. Jenkins, America Square Associates Ltd., 34 Queen's Gate Place Mews, London SW7 5BQ or telephone 01-589 1589.

WM

WOOD, MACKENZIE & CO.
Members of The Stock Exchange

MATHEMATICAL ANALYST/PROGRAMMER

Due to continuing expansion a vacancy has arisen within the computer department for an Analyst/Programmer with a sound mathematical background. The successful applicant will be required to contribute at a high level to special mathematical projects which are being developed on our ICL 1902S/2950 mainframes and via terminals to remote mainframes.

Applicants should have a degree in mathematics or a related subject and general computer experience, including high level language programming. Knowledge of investment techniques and more detailed experience in COBOL/FORTRAN programming would be desirable but not essential.

Location in Edinburgh and conditions of employment are excellent with starting salary negotiable up to £6,000 p.a. depending on experience. The firm operates a profit related bonus scheme and contributory pension scheme.

Please apply giving details of your career to date, to:
Computer Co-ordinator,
Wood, Mackenzie & Co.,
Erskine House, 68-73 Queen Street,
Edinburgh, EH2 4NS. Tel: 031-226 4141

CHIEF ACCOUNTANT
circa £9,500 + car

INSURANCE CITY

A general insurance company, part of a large U.S. group, requires a qualified accountant, aged about 27-35, for a new appointment. He or she will have gained management experience, ideally in the insurance industry. With the help of three managers, the Chief Accountant will control the accounts department, which uses fully computerised systems, and will work closely with the Financial Director. The company is growing fast and offers an attractive opportunity to participate in a dynamic management team.

Please apply:
Sir Timothy Hoare,
Chichester House,
Chichester Rents,
WC2A 1EG.
01-242 5775

Career plan

DREXEL BURNHAM LAMBERT INCORPORATED

A vacancy has arisen in our London Office for an experienced person to handle the settlement of our American Securities business.

This is a position of great responsibility and applicants should be familiar with securities settlement procedures, dealings in currencies and U.K. Exchange Control regulations.

Please apply in writing to:
Mr. A. L. Forward,
Winchester House,
77 London Wall,
London, E.C.2.

Replies will be treated in the strictest confidence.

NEWLY QUALIFIED ACCOUNTANCY APPOINTMENTS

21st September

The Financial Times proposes publishing three pages of Newly Qualified Accountancy Appointments on 21st September following the publication of the results of the Finals Examinations.

If you are expecting to qualify, the Financial Times intends to publish the widest possible range of opportunities open to you.

If you are recruiting "Newly Qualifieds" the advantages of advertising in the Financial Times are considerable—the cost is £14 per single column centimetre—copy can be accepted until the day before publication—and the Financial Times has established an enviable reputation in this field.

For further details, including reprints of previous features, contact:
James Jarratt
on 01-248 4601 (direct line)
or 01-248 8000 ext. 588

FINANCIAL TIMES
EUROPE'S BUSINESS NEWSPAPER

FINANCIAL CONTROLLER

required by expanding home building company. Must be a qualified Accountant with commercial experience preferably within the building industry. This senior post commands a top salary, company car and other benefits. The position offers scope for initiative and the successful candidate, who should be of board material, will be responsible for all financial aspects of the company, including the preparation of company accounts, forecasting and site trading accounts, up-dating of site appraisals on a regular basis and comparisons of actual costs and appraised costs.
Please apply in writing with curriculum vitae in strictest confidence to: Mr. I. Fisch

ARNCLIFFE HOLDINGS LTD.
(inc. Walt Ratcliffe Ltd.),
Holbeck Chambers, 101 The Headrow,
Leeds LS1 5JW. Tel: 445051.

ARNCLIFFE SUPER HOMES

COMMODITY SPECIALIST

A leading International Investment Group has an exceptional vacancy based in London for the person with matching ability. The basic requirements include successful completion of the U.S. National Commodity Futures exam, experience in trading commodities on all the U.S. futures exchanges and expertise in money management: fluency in various Indian dialects including Hindi, Gujrati and faultless English. A knowledge of Persian or Arabic would be highly desirable and a knowledge of Italian, German and French would be advantageous. The ideal candidate will have existing commodity clients in the Middle East/Gulf areas as well as India and be able to develop new prospects in those areas and carry them through to completion.
Salary is circa £12,000 per annum with usual big company fringe benefits. If you feel you can handle this challenge, please write, in strictest confidence, enclosing curriculum vitae, to Box A.6456, Financial Times, 10, Cannon Street, EC4P 4BY.

CHARTERED SURVEYOR WEST AFRICA
c. £16,000 plus allowances

Qualified Chartered Surveyor, probably over 30, married and with considerable experience in West Africa or similar area to manage office in large urban centre. General management, valuation, project finance and construction experience at senior level desirable. Usual free housing, passages and fringe benefits.

Please send curriculum vitae to:
The Advertiser (Ref. JM)
19, Grosvenor Place, London SW1X 7HP

BUSINESS RESEARCH

Up to £7,000 negotiable + car

Age: 25-30 Central London

Our client is a medium sized profitable quoted U.K. company operating in the health care sector. They wish to appoint a Business Research Assistant to their Group Planning Unit.

The appointee will have the specific responsibility for investigating and analysing a wide range of business research projects proposed by the operating divisions and will play a key role in implementation.

Candidates should have a good Honours degree and must have at least three years relevant experience in a medium or large company. This experience could have been acquired in a specialist business research, development or planning function. Some travelling within the U.K. is involved. There are attractive prospects for promotion to a line management position.

Please send a comprehensive career résumé, including salary history and quoting ref. 941 to:

W. L. Tait,
Touche Ross & Co., Management Consultants,
4 London Wall Buildings, London, EC2M 5UJ.
Tel: 01-588 6644.

INVESTMENT MANAGEMENT/RESEARCH

Mid to late 20's

Our client, a major and well respected financial institution, wishes to expand its investment staff.

It is currently seeking graduates or those professionally qualified with two to five years' experience of investment work. The job to be filled combines assisting in the management of portfolios invested around the world and researching for others in the organisation making investment decisions.

The remuneration package will stand comparison with any in the City.

Please send a detailed career résumé, including salary history, quoting ref. 942, to:

W. L. Tait,
Touche Ross & Co.,
Management Consultants,
4 London Wall Buildings,
London, EC2M 5UJ.
Tel: 01-588 6644.

Security Analyst

International financial institution, located in Paris, seeks an insurance industry analyst:

- —28 to 35 years old;
- —At least three years' experience with a good working knowledge of Life and non-Life accounting methods as practised on the Continent;
- —Must speak French; a certain fluency in German would be a plus.

Job function will be to write in-depth reports on the major European insurance companies with special emphasis on comparative judgment and stock market appreciation.

Remuneration in function of experience and indexed to cost of living.

Send c.v. and photo: No. E.12.987 CONTESSE PUBLICITE, 20, Avenue de l'Opera—75040 PARIS CEDEX 01—FRANCE

CHRISTIAN AID invites applications from qualified accountants for the post of Chief Accountant of this overseas aid charity now handling £5m annually. Duties include administering finance department of 10 people. Christian commitment and desire to help needy of Third World are sought in applicants who should write for details to the Director, Christian Aid, P.O. Box No. 1, London, S.W.9.

FOREIGN EXCHANGE DEALER

The National Bank of Detroit has an immediate vacancy for an able dealer with a minimum of three years' experience in the following areas:

Canadian Dollar/U.S. Dollar
and a major European currency

Preferred age range 25-30.

Salary commensurate with experience. Other normal bank benefits. Please write giving full details of experience to:

The General Manager, National Bank of Detroit,
28 King Street, London, EC2P 2AU.

COLORCON LIMITED

FINANCIAL CONTROLLER

We are the UK subsidiary of an American parent engaged in the manufacture and supply of a range of speciality products to the pharmaceutical, food and allied industries.

Applications are invited for this Senior Managerial position:
Reporting on a direct basis to the Managing Director, the successful applicant will be responsible for all aspects of the Financial Management of the company.
Duties will include:

- PREPARATION AND PRESENTATION OF BUDGETS, FINANCIAL AND BUSINESS PLANS
- MONTHLY PREPARATION OF MANAGEMENT ACCOUNTS
- CASH FORECASTING
- COSTINGS
- LIAISON WITH USA PARENT AND ATTENDANCE AT ANNUAL FINANCIAL MANAGEMENT MEETINGS
- CO-ORDINATION OF MANAGEMENT INFORMATION SERVICES IN ACCORDANCE WITH ESTABLISHED PLANS TO INTRODUCE A COMPUTERISED SYSTEM
- INVOLVEMENT IN COMPANY AND PRODUCT ACQUISITIONS.

Applicants must be qualified accountants with at least 5 years industrial experience. A strong personality and self motivation are essential requirements.

The successful applicant will be joining a dedicated team of professional managers and we envisage a total remunerative package of £9,500.00 which includes a company car, pension scheme etc.

Please write in confidence, enclosing a detailed curriculum vitae, to:— Miss Irene Scorer, Colorcon Limited, Orpington Trading Estate, Sevenoaks Way, Orpington, Kent BR5 3SR.

International Senior Accountant for Europe's No1

We have a challenging opening with considerable promotion prospects as well as the opportunity to travel extensively for an ambitious and well qualified Accountant with Hertz, Europe's number one Car Rental Company.

The successful candidate will be based at our West London European Headquarters, spending some 60%–70% of his or her time abroad, mainly in Europe. Responsibilities will be varied and include the review of European subsidiaries' monthly reports, the co-ordination and preparation of budgets, and ad hoc analyses both in London and Europe.

The job obviously calls for someone with wide experience who has worked and preferably trained in a sophisticated accounting environment. At least 2 years' post qualification experience is essential and a working knowledge of at least 1 European language would be an asset.

A starting salary in the region of £8,000 pa will be offered plus all the usual benefits associated with a major international company.

Please write giving full career and personal details to Ms W Skinner, Hertz Europe Limited, Isleworth House, Great West Road, Isleworth, Middx.

Hertz ® THE No1 COMPANY

UNIVERSITY OF NAIROBI

Applications are invited for the following posts in the DEPARTMENT OF BUSINESS ADMINISTRATION.

ASSOCIATE PROFESSOR. Applicants should hold a Doctorate in Business Administration (preferably Marketing), Management or a related Social Science field and must have considerable teaching and research experience. Applicants should have a recognised publishing record and be capable of providing both academic and curriculum development leadership to the more junior Faculty members. The appointee will be expected to teach in one of the following areas in either the undergraduate (B.Com.) or the graduate (M.B.A.) programme: Marketing, Organisation Theory and Behaviour, Business Policy or Labour Relations and Personnel Administration. The appointee will also be expected to guide the research activities of students in the M.B.A. programme and also specialise in either Business Policy or Personnel Management.

SENIOR LECTURER. Applicants should have at least a Masters Degree in Business Administration, Management or a related Social Science and teaching, research and significant administrative experience or professional qualifications. The appointee will be expected to teach at the undergraduate and postgraduate level and have the capacity to give academic and research leadership in some of the following areas:—Personnel Administration, Labour Relations, International Business, Organisation Theory and Behaviour Marketing, Public Enterprise Management.

Salary scales: Associate Professor [illegible] pa. Senior Lecturer [illegible] pa (£K1=£1.36 sterling). The British Government may supplement salaries in range [illegible] pa (sterling) for married appointees and [illegible] pa (sterling) for single appointees (reviewed annually and normally free of all tax) and provide children's education allowances and holiday visit passages. Family passages; SSSP or FSSU; non-contributory medical scheme; subsidised housing. Detailed application (2 copies) with curriculum vitae and naming 3 referees to be sent direct to Registrar, University of Nairobi, PO Box 30197, Nairobi, Kenya by 26 September 1978. Applicants resident in the UK should also send one copy to the Inter-University Council, 90 91 Tottenham Court Road, London W1P 0DT.

ART GALLERIES

FIELDBOURNE GALLERIES, 63, Queen's Grove, St. John's Wood. 586 3600. LANDSCAPES by Royal Academicians. MARBLE Carvings YOMA SASBURGH.

FINE ART SOCIETY, 148, New Bond St., W.1. 01-629 5116. SUMMER EXHIBITION

OMELL GALLERIES. Fine British and French MODERN DRAWINGS and Modern British MARITIME PICTURES. 42, Albemarle Street, Piccadilly, W.1.

CLUBS

EVE, 189, Regent Street. 734 0557. A la Carte or All-in Menu. Three Spectacular Floor Shows 10.45, 12.45 and 1.45 and music of Johnny Hawkesworth & Friends.

COMPANY NOTICES

BRASCAN LIMITED

(Incorporated under the Laws of Canada)

NOTICE IS HEREBY GIVEN that the Board of Directors of this Company has declared a quarterly dividend of twenty-five cents (25 cents) per share (in United States funds) on the Company's Class A, Class B, and Class C Convertible Ordinary Shares without nominal or par value, payable October 31, 1978, to shareholders of record at the close of business on October 1, 1978.

The dividend payable on Class A Convertible Ordinary Shares represented by share warrants to bearer will be paid only against surrender of such bearer warrants (with coupons serial Nos. 154/160, both inclusive, with talons attached) in exchange for bearer International Depositary Receipts issued by Morgan Guaranty Trust Company of New York at Brussels, Belgium, in respect of Class C Convertible Ordinary Shares of the Company or for registered share certificates of the Company. Bearer warrants (with coupons series Nos. 154/160, both inclusive and talons attached) may be surrendered for exchange to:

CIK,
50, Rue de Namur,
1000 Brussels;
or
Morgan Guaranty Trust Company of New York,
35, Avenue des Arts,
1040 Brussels.

Dated at Toronto, Canada, the 29th day of August, 1978.

By Order of the Board
L. A. ALLEN, Secretary.

The Transfer Agents of the Company are National Trust Company, Limited, Toronto, Montreal, Vancouver, Calgary, Winnipeg and Halifax, Canada, and Citibank, N.A., New York, N.Y., U.S.A.

Changes of address should be notified promptly to National Trust Company, Limited, at 21, King Street East, Toronto, Canada M5C 1B3.

CONTRACTS AND TENDERS

ELETROBRAS
ESCELSA AND CELESC
COMPANHIA AUXILIAR DE EMPRESAS ELETRICAS BRASILEIRAS (CAEEB)

NOTICE TO PROSPECTIVE SUPPLIERS
BRAZIL
SOUTH - SOUTHEAST POWER DISTRIBUTION PROJECT
LOAN 1538-BR

Espirito Santo Centrais Eletricas S.A. (ESCELSA) and Centrais Eletricas De Santa Catarina S.A. (CELESC) are participating through Centrais Eletricas Brasileiras S.A. (ELETROBRAS) in a loan from the World Bank in various currencies equivalent to US$130 Million, and ESCELSA and CELESC propose to apply their share in the proceeds of this loan to the purchase of equipment and materials for their expansion programmes for the years 1978 through 1981.

ESCELSA and CELESC have contracted Companhia Auxiliar de Empresas Eletricas Brasileiras (CAEEB) to co-ordinate the application of the loan funds.

The programme will cover the expansion of the sub-transmission and distribution systems of the aforementioned companies. During the next 12 months this will include the procurement of the undermentioned groups of equipment and materials:

Material	Estimated Value (US$ 1,000)
1—Aluminium Cable and Conductor	9.237
2—Disconnect and Power Fuse Switches	2 667
3—Fuse Cutouts, Oil, Tilting, and Vacuum Switches	386
4—Power Capacitors	1 384
5—Power Capacitor Switches and Controls	134
6—Voltage Regulators (Stations and Distribution Types)	1.329
7—Automatic Sectionalisers	453
8—Reclosers	1.141
9—Luminaries and Accessories	552
10—Power Transformers and Distribution Transformers	18.235
11—Circuit Breakers	3.735
12—Metal Clad Switchgear	850
13—Control and Protection Switchboards	464
14—Lightning Arresters	1.218
15—Instrument Transformers	2.057
16—Watthour Metres, Single Phase, Polyphase and Demand	9.109
17—Battery/Battery Charger Set	334
18—Test and Laboratory Equipment (Instruments)	1.615
19—Hot Line Maintenance Equipment	1.293
20—Radio Communication Equipment	3.648
21—Mobile Substation	562
22—Steel Structures	1.477
23—600 V Insulated Conductors	1.101
24—Relays	1 387
25—Insulators (Suspension and Pedestal Types)	1.977
26—Copper Conductors	2.956
27—Grounding System (Steel Cable)	590
28—Various small items including Meteorological Station, Microfilm Equipment, Filters and Oil Purification Equipment, Travelling Crane, Portable Single Phase Generator, Emergency Generator 50 KVA mounted on low-boy, Distribution Transformer mounted on low-boy	2.049
TOTAL	71.900

Remarks: Concrete poles and structures for this project will not be financed from the proceeds of the loan.

Invitations to Bid will be issued by CAEEB at least two months before the bid opening date and will be open to any manufacturer or supplier located in any member country of The World Bank or Switzerland. The use of raw, semi-manufactured or manufactured material from a non-member country other than Switzerland will not be permitted.

Each individual bid invitation will be advertised in Brazil in "The Jornal do Brasil" when bidding documents become available, and applications for participation in individual bids will be considered when they are received.

In the meantime, suppliers and manufacturers who wish to be included in a mailing list, and to receive the aforementioned bid invitations are requested to write now to the undersigned, indicating in which group of contracts they are interested.

Co-ordenador de Compras
CAEEB,
P.O. Box 885,
Rio de Janeiro ZC-00,
Brazil.

The letters from prospective suppliers and manufacturers should include the undermentioned information:—

(i) A record of experience and past performance in the manufacture of the equipment and material they propose to bid.
(ii) Catalogues and descriptive literature of the types of material and equipment which the manufacturer proposes to bid.

OBITUARY

REYNELL. On 24th August, 1978, Ethel Reynell. Private funeral will take place on Friday, 1st September. No flowers please. Donations if wished to the Variety Artists Ladies and Childrens Guild, 18, Charing Cross Road, W.C.2. Memorial service to be held at Methodist Central Hall, small chapel, Westminster Central Hall, Westminster,—on Friday, 15th September, at 11.30 a.m.

COMPANY NOTICES

McCARTHY GROUP LIMITED

(Incorporated in the Republic of South Africa)

NOTICE TO SHAREHOLDERS

PRELIMINARY PROFIT ANNOUNCEMENT AND DIVIDEND DECLARATION

The directors announce that the unaudited group profit for the year ended 30th June, 1978, with comparative figures for the previous year, is as follows:—

	1978 Unaudited R000	1977 Audited R000
Group operating profit	9 418	7 223
Less: Interest	3 468	4 149
Taxation	2 542	1 246
Minority interest	267	262
Group net profit	3 141	1 566
Issued ordinary shares	16 987 415	16 987 415
Earnings per ordinary share (after tax and preference dividends)	18.4c	9.1c
Dividends declared for the year:		
Interim ordinary	3.0c	2.5c
Final ordinary	4.5c	3.5c

At the end of the third quarter of the financial year the vehicle market was only at the level of the previous year: sales increased appreciably after the budget in March. As a result, the total dealer market for the year was 12% ahead of the previous year and new unit sales for the group showed a corresponding increase.

Group turnover for the year rose 21%, and, as a result of maintaining fixed expenses at the previous year's level and reducing interest paid, earnings per share increased by 102%.

A comprehensive report concerning the group's trading activities will be contained, as usual, in the Chairman's review and the report of the directors to be issued at the end of September, 1978.

Final Ordinary Dividend No. 75

NOTICE IS HEREBY GIVEN that the final ordinary dividend No. 75 at the rate of 4.5 (four comma five) cents per share has been declared by the directors for the year ended 30th June, 1978, payable to holders of ordinary shares registered in the books of the company at the close of business on the 22nd September, 1978.

The dividend is declared payable in the currency of the Republic of South Africa and dividend warrants will be posted in South Africa to all shareholders on or about the 20th October, 1978.

For the purpose of establishing the shareholders entitled to participate in this dividend, the transfer register of the company will be closed from the 22nd September, 1978, to the 29th September, 1978, both days inclusive. Shareholders are advised that any change of address and/or dividend instructions must be lodged with the transfer secretaries on or before the 22nd September, 1978, at their address given below.

In terms of the South African Income Tax Act 1962 (as amended), the Non-Resident Shareholders' Tax of 15% will be deducted by the company from dividends payable to shareholders whose addresses in the register of members are outside the Republic of South Africa.

By Order of the Board.
B. J. CLOUSTON, A.C.I.S.,
Secretary.

Registered Office:
1101 Nedbank Circle,
377 Point Road,
DURBAN.
28.8.78.

Transfer Secretaries and Certification Office:
Hill Samuel Registrars (S.A.) Limited.
P.O. Box 62318, Marshalltown, 2107.
TRANSVAAL.

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LEGAL NOTICES

Nos. 002572, 002573 and 002575 of 1978

In the HIGH COURT OF JUSTICE Chancery Division Companies Court. In the Matters of MILANDER SECURITIES LIMITED, FRANGS (MUSICAL INSTRUMENTS) LIMITED and SAFFRON HAIR DESIGN LIMITED and in the Matter of the Companies Act, 1948

NOTICE IS HEREBY GIVEN that Petitions for the Winding-Up of the above-named Companies by the High Court of Justice were, on the 14th day of August 1978, presented to the said Court by the Commissioners of Customs and Excise of King's Beam House, 39-41 Mark Lane, London, EC3R 7HE and that the said Petitions are directed to be heard before the Court sitting at the Royal Courts of Justice, Strand, London, WC2A 2LL on the 16th day of October 1978, and any creditor or contributory of any of the said Companies desirous to support or oppose the making of an Order on any of the said Petitions may appear at the time of hearing in person or by his Counsel for that purpose; and a copy of the Petition will be furnished by the undersigned to any creditor or contributory of any of the said Companies requiring such copy on payment of the regulated charge for the same.

G. F. GLOAK
King's Beam House
39-41 Mark Lane
London, EC3R 7HE
Solicitor for the Petitioners

NOTE.—Any person who intends to appear on the hearing of any of the said Petitions must serve on, or send by post to, the above-named notice in writing of his intention so to do. The notice must state the name and address of the person, or, if a firm, the name and address of the firm, and must be signed by the person or firm, or his or their solicitor (if any) and must be served, or, if posted, must be sent by post in sufficient time to reach the above-named not later than four o'clock in the afternoon of the 13th day of October 1978.

No. 002602 of 1978

In the HIGH COURT OF JUSTICE Chancery Division Companies Court. In the Matter of SOUTH LONDON AGENTS (IMPORT & EXPORT) LIMITED and in the Matter of The Companies Act 1948.

NOTICE IS HEREBY GIVEN that a Petition for the winding up of the above-named Company by the High Court of Justice was on the 16th day of August 1978 presented to the said Court by H. & R. JOHNSON-RICHARDS TILES LIMITED, Tunstall, Stoke on Trent, and that the said Petition is directed to be heard before the Court sitting at the Royal Courts of Justice, Strand, London WC2A 2LL, on the 16th day of October 1978, and any creditor or contributory of the said Company desirous to support or oppose the making of an Order on the said Petition may appear at the time of hearing in person or by his Counsel for that purpose; and a copy of the Petition will be furnished by the undersigned to any creditor or contributory of the said Company requiring such copy on payment of the regulated charge for the same.

JENKINS, DOGGETT & CO.,
22 Mulfords Hill,
Tadley,
Basingstoke,
Hants. RG26 6JQ.

NOTE.—Any person who intends to appear on the hearing of the said Petition must serve on or send by post to the above-named notice in writing of his intention so to do. The notice must state the name and address of the person, or, if a firm, the name and address of the firm, and must be signed by the person or firm, or his or their solicitor (if any), and must be served or, if posted, must be sent by post in sufficient time to reach the above-named not later than 4 o'clock in the afternoon of the 13th day of October 1978.

No. 002603 of 1978

In the HIGH COURT OF JUSTICE Chancery Division Companies Court. In the Matter of BEER KELLERS LIMITED and in the Matter of the Companies Act, 1948.

NOTICE IS HEREBY GIVEN that a Petition for the winding-up of the above-named Company by the High Court of Justice was, on the 16th day of August 1978, presented to the said Court by the Commissioners of Customs and Excise of King's Beam House, 39-41 Mark Lane, London, EC3R 7HE, and that the said Petition is directed to be heard before the Court sitting at the Royal Courts of Justice, Strand, London, WC2A 2LL on the 16th day of October 1978, and any creditor or contributory of the said Company desirous to support or oppose the making of an Order on the said Petition may appear at the time of hearing in person or by his Counsel for that purpose; and a copy of the Petition will be furnished by the undersigned to any creditor or contributory of the said Company requiring such copy on payment of the regulated charge for the same.

G. F. GLOAK,
King's Beam House,
39-41 Mark Lane,
London, EC3R 7HE.
Solicitor to the Petitioners.

NOTE.—Any person who intends to appear on the hearing of the said Petition must serve on, or send by post to, the above-named notice in writing of his intention so to do. The notice must state the name and address of the person, or, if a firm, the name and address of the firm, and must be signed by the person or firm, or his or their solicitor (if any) and must be served, or, if posted, must be sent by post in sufficient time to reach the above-named not later than four o'clock in the afternoon of the 13th day of October 1978.

PERSONAL

BATH SERVICES
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Bath Services,
26 Romilly Street London W1
Telephone 01-437 8238/8713
Telephone Sheffield 661696
Telephone Winchester 66587

GOLF CLUB MEMBERSHIP. Company membership also available. Drift Golf & Country Club, Surrey. Phone East Horsley 4641.

BUSINESS OPPORTUNITIES
BUSINESSES FOR SALE

All Advertisements scheduled to appear in to-day's paper will be published on

Tuesday 5th September

APPOINTMENTS

Reorganisation of Davy group

DAVY INTERNATIONAL is to create two major operating groups—engineering and construction and engineering and manufacturing. All the present companies will be within one or other of these two groupings.

It is also proposed to change the title of Davy International to Davy Corporation. This will release the name Davy International for use by the new engineering and construction group and the engineering and manufacturing group will then be called Davy Engineering Industries. The new names are expected to become effective on September 26.

At Davy International Mr. A. N. Whiting will be chief executive; Mr. S. Burns becomes chief executive Europe and will also deputise for Mr. Whiting; and Mr. M. J. Milner will have the new position of corporate development officer.

Davy Engineering Inustries will be managed by Mr. L. Ashworth as chief executive; Mr. E. P. McTighe as deputy chief executive; and Mr. J. D. Eccles.

★

Mr. C. G. N. Ryder has been appointed deputy chairman of the CHINA NAVIGATION COMPANY from tomorrow. The company is a member of the Swire Group.

★

Mr. D. Lewis Macdonald has been appointed production director and Mr. Trefor J. Watkins, financial director, of RACAL-DATACOM.

★

Mr. J. G. McMillan has been appointed area manager at the inner city area office of NATIONAL WESTMINSTER BANK on the retirement of Mr. L. R. Carnell.

★

Mr. Peter Shuttleworth has been appointed a director of LINDUSTRIES from tomorrow.

★

Mr. Charles Pearce has been appointed a director of TI ACCLES AND POLLOCK and Mr. K. L. T. Richardson has become director of marketing.

★

BRITISH RAILWAYS BOARD states that following the completion of his term of appointment as a part-time member of the Board, Mr. David McKenna will continue as chairman of its environment panel and of its industrial design panel, and as chairman of the Board of British Transport Advertising. Mr. McKenna will also remain for the time being to represent the Board on the Societe Internationale pour le Transport par Transcontainers (Intercontainer).

★

Mr. Peter N. Blackaby has been appointed as a member of the HOPS MARKETING BOARD for three years. He is head of business planning for J. Lyons and Company.

★

ITT BUSINESS SYSTEMS UK has made three senior appointments within the group. Mr. John King moves to Brussels as European director of business and market development, ITT Business Systems and Communications Group, and is succeeded as marketing director of ITT Business Systems UK by Mr. Peter Benstead, at present marketing manager. Mr. Geoffrey Meadowcroft becomes head of the group's data systems division at Cockfosters. He succeeds Mr. Jim Foord, who was recently appointed chief executive.

★

Mr. S. A. Briggs has relinquished his position as company secretary of BERNARD MATTHEWS but remains financial director. He is succeeded as secretary by Mr. J. G. Brown.

★

Mr. Robin Nash has been appointed BBC TELEVISION'S head of variety. He takes over tomorrow from Mr. Terry Hughes who is leaving the BBC at his own request to return to production as a freelance.

★

The Secretary for the Environment has appointed Mr. Ronald Groves and Mr. Lewis Rose to be members of the board of the NATIONAL BUILDING AGENCY. Mr. Groves is chairman and chief executive of the International Timber Corporation. Mr. Rose is a solicitor.

★

Mr. Hugh Rafferty has been appointed manager of the city office of the BANK OF IRELAND in Coleman Street, London.

UK ECONOMIC INDICATORS

ECONOMIC ACTIVITY—Indices of industrial production, manufacturing output engineering orders, retail sales volume (1970=100); retail sales value (1971=100); registered unemployment (excluding school leavers) and unfilled vacancies (000s). All seasonally adjusted.

	Indl. prod.	Mfg. output	Eng. order	Retail vol.	Retail value	Unemployed	Vacs.
1977							
2nd qtr.	102.1	103.2	106	102.5	222.0	1,330	163
3rd qtr.	103.0	104.0	106	104.3	234.2	1,418	151
4th qtr.	102.4	103.4	106	104.4	239.4	1,431	157
1978							
1st qtr.	103.5	103.8	98	106.3	246.0	1,409	188
2nd qtr.	104.3	104.8		107.9	254.2	1,367	213
Feb.	103.7	103.7	116	106.8	246.5	1,409	187
March	103.5	104.4	103	107.0	249.8	1,400	196
April	105.4	105.8	104	106.7	250.3	1,387	204
May	103.3	103.6	117	108.4	255.2	1,366	210
June	104.2	105.0		108.6	257.1	1,365	217
July				110.5		1,371	211
August						1,331	208

OUTPUT—By market sector: consumer goods investment goods, intermediate goods (materials and fuels); engineering output, metal manufacture, textiles, leather and clothing (1970=100); housing starts (000s, monthly average).

	Consumer goods	Invst. goods	Intmd. goods	Eng. output	Metal mnfg.	Textile etc.	Housg. starts*
1977							
2nd qtr.	113.4	98.1	105.2	99.2	80.5	100.2	25.1
3rd qtr.	115.5	98.6	104.9	100.1	83.3	100.7	25.4
4th qtr.	117.0	98.0	101.9	99.4	74.8	100.0	20.7
1978							
1st qtr.	116.1	99.6	104.6	100.7	76.8	99.7	17.8
2nd qtr.	116.8	99.0	106.9	101.2	83.1	100.5	26.7
Jan.	116.0	100.0	104.0	101.0	75.0	99.0	17.4
Feb.	117.0	99.0	106.0	101.0	78.0	100.0	15.3
March	117.0	100.0	104.0	102.0	78.0	100.0	20.6
April	117.0	100.0	109.0	102.0	85.0	105.0	25.4
May	115.0	98.0	106.0	101.0	83.0	98.0	25.1
June	118.0	99.0	106.0	101.0	80.0	98.0	29.6

EXTERNAL TRADE—Indices of export and import volume (1975=100); visible balance; current balance; oil balance; terms of trade (1975=100); exchange reserves.

	Export volume	Import volume	Visible balance	Current balance	Oil balance	Terms trade	Resv. US$bn*
1977							
2nd qtr.	118.0	109.8	−764	−365	−745	100.3	14.9
3rd qtr.	124.1	106.4	+ 54	+537	−602	101.0	13.4
4th qtr.	117.9	102.6	+ 45	+486	−657	102.4	20.39
1978							
1st qtr.	102.3	114.3	−574	−305	−646	105.1	20.63
2nd qtr.	122.6	110.0	−139	+221	−420	104.4	16.75
Feb.	127.4	111.3	+ 43	+132	−203	104.8	20.7
March	121.4	116.9	−279	−189	−209	104.8	20.32
April	125.9	104.1	+187	+307	−149	104.0	17.04
May	119.9	114.1	−218	− 98	−155	105.1	16.66
June	121.9	111.9	−108	+ 12	−116	104.1	16.54
July	128.9	117.1	−150	− 30	−229	104.8	16.74

FINANCIAL—Money supply M1 and sterling M3, bank advances in sterling to the private sector (three months' growth at annual rate); domestic credit expansion (£m); building societies' net inflow; HP, new credit; all seasonally adjusted. Minimum lending rate (end period).

	M1 %	M3 %	Bank advances %	DCE £m	BS inflow	HP lending	MLR %
1977							
2nd qtr.	24.8	14.9	5.5	+769	1,290	1,047	8
3rd qtr.	28.0	10.4	20.3	+365	1,084	1,149	7
4th qtr.	23.2	12.6	8.8	+698	1,565	1,189	7
1978							
1st qtr.	24.7	24.0	17.5	+1,818	1,049	1,260	6½
2nd qtr.	8.7	15.9	24.8	+2,893	694	1,393	10
Feb.	26.8	25.5	17.9	+963	353	416	6½
March	24.7	24.0	17.5	+597	308	413	6½
April	19.1	24.7	12.6	+1,432	335	463	7
May	13.2	17.4	18.3	+1,124	212	471	9
June	8.7	15.9	24.8	+337	147	459	10
July	9.3	9.5	25.9	+114	180		10

INFLATION—Indices of earnings (Jan. 1976=100); basic materials and fuels, wholesale prices of manufactured products (1970=100); retail prices and food prices (1974=100); FT commodity index (July 1952=100); trade weighted value of sterling (Dec. 1971=100).

	Earnings*	Basic matls.*	Whsale. mnfg.*	RPI*	Foods*	FT* comdty.	Strlg.
1977							
2nd qtr.	114.5	347.7	259.2	181.9	191.1	250.0	61.6
3rd qtr.	116.1	340.5	267.7	184.7	192.1	239.9	61.8
4th qtr.	119.9	330.6	273.1	187.4	193.3	234.2	63.3
1978							
1st qtr.	123.1	326.7	279.0	190.6	197.3	238.61	64.6
2nd qtr.	129.9	340.7	284.6	195.8	203.8	242.27	61.5
Feb.	122.7	324.2	279.2	190.6	197.3	224.86	66.0
March	125.0	331.0	280.6	191.8	198.4	238.61	64.1
April	127.2	337.4	282.7	194.6	201.6	238.94	61.8
May	129.4	341.5	284.6	195.7	203.2	250.67	61.5
June	133.1	343.1	286.3	197.2	206.7	242.27	61.5
July		340.2	288.7	198.1	206.1	237.68	62.5
August						246.8	62.4

HOME NEWS

Court to decide technology ban on UK concern

BY JOHN LLOYD

A COURT in Dallas, Texas, is to hear a plea next week that Inmos, the U.S.-based microelectronics subsidiary of Britain's National Enterprise Board, be restrained permanently from acquiring and using trade secrets claimed as belonging to Mostek, a Texas microelectronics company.

The hearing has been delayed for Mostek to collect more evidence. An adverse judgment might jeopardise Inmos's future operations.

Mostek may also seek to have Inmos restrained from employing Mostek personnel, including four former Mostek employees now contracted to Inmos whose resignations from Mostek gave rise to the current case.

Mostek succeeded this week in gaining temporary injunctions against Inmos on two counts relating to trade secrets, but attempts to stop Inmos hiring Mostek employees, or continuing to employ the former Mostek workers, were rejected.

The former Mostek men at the heart of the dispute are Mr. Ward Parkinson, a senior design engineer; Mr. Douglass Pittman, a draughtsman; Mr. Dennis Wilson, a design engineer; and Mr. David Wooten, an applications engineer. Only Mr. Parkinson had held a senior position.

However, one of three Inmos directors, Dr. Paul Schroeder, had until recently played a key role in Mostek, where he had been director of memory design engineering since 1976.

Dr. Richard Petritz, another Inmos director and the creator of the company, founded Mostek in 1969, though he had severed his connection with it for some years.

Dr. Petritz and Dr. Schroeder believe that victory for Mostek would place Mostek in a position to define trade secrets for itself, possibly covering a broader area of knowledge than that which was actually secret.

Thus information available from a variety of sources would be debarred from use by Inmos specifically, putting it at a severe disadvantage in relation to Mostek and to other advanced microelectronics companies, which would be able to use such technology.

Mostek has become a successful company, employing 4,500 people with a turnover of $70m last year. It specialises in advanced computer technology, including the manufacture of micro-computer memories, an area in which Inmos will concentrate.

Inmos plans to produce a range of microprocessors and the most advanced random access memory—the 64K RAM—which has a capacity for 64,000 "bytes" or units of information.

Mostek, with ITT and other companies in the U.S. and Japan, are designing the next-generation chip. Large profits will go to the company which can first produce a RAM that performs well in a variety of functions.

ITT plans to invest £5m at British factory

By John Lloyd

ITT, the U.S.-based multinational, is to undertake a £5m investment programme at its semiconductor plant at Footscray, South East London.

It is understood that negotiations on Government aid of a further £1m are nearly complete.

The expansion is part of a European investment programme of more than £10m. About £5m will also be spent on a wafer fabrication plant at the company's Intermetall plant in Freiburg, West Germany.

The new Freiburg plant will be used to make about 4,000 wafers—the backing for integrated circuits—a week.

Footscray, which specialises in the manufacture of micro-computer memories, will expand its production, especially of the 16K RAM (random access memory), the most advanced memory in mass production.

The company recently won a £500,000 order for 16Ks from Europe.

It is also thought likely that the company will develop its own version of the 64K RAM, the next generation memory.

This expansion will probably take ITT into the ranks of volume producers of micro-processors and micro-computer memories, though definitions of what constitutes a volume producer vary.

Computer staff needs studied

By John Lloyd

FUTURE MANPOWER needs of the UK computer industry will be studied by the Electronics Sector Working Party of the National Development Office.

The £30,000 study is aimed at assisting the improvement of the UK's position as a producer of computers and computer technology.

● HONEYWELL is to start UK production of its new Level 6 range of mini-computers at its Scottish plant at Newhouse, Strathclyde, our Glasgow Correspondent reports.

THE FIRST rapid transport Metrocar (above) was delivered to the Tyneside yesterday by Metro-Cammell of Birmingham. Altogether, 88 of the cars will operate on the £161m Tyne and Wear Metro.

The initial phase was due to open next spring, but because of inter-union dispute it will probably be delayed, says Tyneside Passenger Transport Executive.

Rail and bus drivers' unions are arguing over who should drive the "supertrams," although they have agreed in principle that work should be shared.

There have also been spasmodic delays on construction work for the light railway, believed to be the first of its kind in Britain.

Monday Club urges direct tax cut

BY DAVID FREUD

A BIG cut in direct taxation is called for by the Monday Club, the independent Conservative pressure group.

The group said in a policy paper released yesterday that the cut should be accompanied by a simplification in the administration of direct taxation, even if this meant increasing direct taxes.

Changes in taxation were put forward as the main way to revive the economy, through encouraging individuals and corporations to create and expand their businesses and employees to increase their output.

The issue of shares to employees was a valuable incentive and called for a reduction of the public sector. The National Enterprise Board should be abolished and Government equity participation in private industry ended.

The concept of a negative income tax should be revived and a single low flat rate of income tax should be examined closely. The investment income surcharge, should be abolished.

Two tax changes of considerable advantage to people running small businesses would be the indexation of capital gains tax and an increase in the business relief provisions of capital transfer tax.

The group said that corporation tax should be abolished because very little of its was paid currently. Instead, the authorities should rely solely on advanced corporation tax.

● The Tory aim of cutting Government expenditure would improve employment prospects, not worsen them, Sir Keith Joseph, opposition spokesman on industry, said yesterday.

Sir Keith said wasteful public spending was paid for through higher taxes, additional borrowing and printing of money. "In other words, the Government has been reducing personal spending in order to spend more itself."

Land-Rover meets expansion target

BY KENNETH GOODING, INDUSTRIAL CORRESPONDENT

THE FIRST phase of an expansion programme at BL's Land-Rover subsidiary is on target and should raise Range-Rover capacity by 50 per cent and add 10 per cent to Land-Rover output by next spring.

Mr. Mike Hodgkinson, Land-Rover's managing director, gave this news to the 9,000 employees yesterday, when he also provided a detailed breakdown of how the first phase cash of £30m is to be spent.

It is part of an overall £280m investment aimed at nearly doubling production of both Land-Rovers and Range-Rovers by 1982.

Plans for the second phase, involving expenditure of £250m will be submitted to the BL board in the next few weeks.

They are likely to receive sympathetic consideration, given that Land-Rover can sell all it produces and the waiting list for its vehicles stretches up to two years.

Currently, the company claims around 15 per cent of the world four-wheel-drive market, but faces increasing competition from the Americans and Japanese.

Productions now stands at about 300 Range-Rovers and 1,350 Land-Rovers a week.

Mr. Hodgkinson said that £8m of the first-phase money will be spent at the South Works, Solihull, to expand painting facilities and improve Land-Rover body build lines.

Axle manufacture at Perry Barr, Birmingham, and Solihull North Works will get £5.3m.

Another £3.2m is being spent to increase production of Range-Rover gear boxes at Tyseley Number Two plant, Birmingham.

At Acocks Green, Birmingham, a new V8 engine assembly track has been installed with a capacity of over 2,000 units a week.

Cutlery prices 'could treble'

BY RHYS DAVID

CONSUMERS could pay three times as much for cutlery if pressures from sections of the industry for greater protection from imports succeeded, the British Importers Confederation said yesterday.

The warning is the latest in the dispute over the industry's future which has already seen a major split in Sheffield, home of the industry, over the issue of protection.

The importers, who have as much as 90 per cent of the market in some products, now want to put their own case to the Government and have asked Mr. Michael Meacher, a junior Minister at the Department of Trade, for an urgent meeting.

The confederation, so far, has stayed largely on the sidelines, but has now been provoked into action by a memorandum circulated by the recently-formed Federation of British Cutlery Manufacturers, which is campaigning for a phased reduction of the market to less than 50 per cent.

Mr. Dennis Statham, the importer's chairman, claims that if import restrictions were introduced they would be used as a barrier behind which the UK industry would hide at the expense of the consumer without any real improvement in efficiency.

He also challenges the manufacturers' argument that about 5,000-8,000 jobs would be created, as being unsupported by any evidence. The figure would imply high manning levels which could result only in increased prices.

He said: "Cutlery is a basic domestic product and the user should be given the opportunity of exercising freedom of choice. For some people the absence of imported cutlery would mean that they would have to go without unless they were prepared to spend more than they could afford."

Mr. Statham also criticises the industry's delivery performance, claiming that even in areas where it remains strong, such as the production of traditional EPNS King's pattern cutlery, long delays were common.

"It is meaningless to talk about unfair competition if the British industry is incapable of meeting the demands of the home market."

Meanwhile, the leading figure behind the manufacturers, Mr. John Price, head of the Birmingham-based Arthur Price of England cutlery group, is making further inroads into Sheffield with the acquisition of Sanders and Bowers, producers of top quality kitchen knives.

Mr. Price, whose company already operates two Sheffield factories, claims that the take-over could result in 50 new jobs.

Records go in Scotland

SALEROOM

BY ANTONY THORNCROFT

SOTHEBY'S annual August Bank Holiday sales at Gleneagles Hotel in Scotland were a great success, bringing in £293,803 over the two days, with five artist records among the pictures. The top price, and a record, was £10,000 paid by the Fine Art Society for "A Promenade" by George Henry, a portrait of two Japanese ladies, first exhibited in the Royal Academy in 1912.

The other records were £6,500 from the Tryon Gallery for "Water Lilies," painted in 1903 by William MacGeorge; £3,300 for "Washing the Creel" by Robert Hutchison; £3,200 from the Fine Art Society again, for "The Edinburgh Academy" by John Wells; and £3,000 for "Portrait of the Artist and his Wife" by John Aiken, dated 1910.

Apart from the records, £5,500 was paid for "The Ghillie's Sojourn" by James Hardy, and the same sum secured "A Geisha Girl," also by George Henry.

British ships set record

BY IAN HARGREAVES, SHIPPING CORRESPONDENT

BRITISH SHIPPING again made a record contribution to the country's balance of payments last year, although the rate of growth slowed down sharply in the face of the industry's world recession.

According to figures from the General Council of British Shipping, UK-owned merchant ships earned £1,035m net last year, an increase of £21m over 1976, representing a 2 per cent improvement.

Total earnings for the industry last year were £2.6bn, an increase of £143m, including gross export earnings of £2.1bn.

Mr. Ronnie Swayne, president of the council, acknowlegde the part inflation had played in creating the new record, but added: "It is still a remarkable and encouraging achievement to have increased both receipts and contribution to the national economy in the face of a deep and prolonged recession."

Expansion rate likely to slacken

BY PETER RIDDELL, ECONOMICS CORRESPONDENT

THE RATE of expansion of the UK economy is likely to slacken next year though the growth, inflation and external performance should be better than in the period 1974-77.

The slackening is indicated by a comparison of 10 forecasts of the UK economy carried out by various official, academic and commercial organisations.

The main feature is a wide measure of unanimity about the prospects for the next 12 to 18 months—a consumer led mini-boom this year followed by slightly slower growth in 1979, a current account between balance and a small surplus, a slight acceleration in the inflation rate and little change in the level of unemployment.

This degree of agreement does not mean, of course, that this is what will happen, but the widespread expectation of this outcome will influence both markets and policy makers.

The main conclusion drawn by most analysts is that neither the balance of payments nor public sector borrowing and monetary constraint allow much scope for a substantial fiscal stimulus in the Budget next spring. Indeed some commentators have suggested that existing spending plans may have to be reined back, though the National Institute has called for further reflation.

The forecasts are generally on the basis of existing policies, except that direct tax allowances are assumed to be increased next spring in line with inflation.

However, both the Henley Centre and Chase Econometrics expect some extra cuts in income tax in the next Budget, this may largely explain why these two groups are forecasting a faster rate of expansion next year than shown by the other projections on present policies.

Otherwise, the main differences in the projections concern the current account of the balance of payments. A surplus of £1.9bn expected by the National Institute next year contrasts with the small deficit projected by the London Business School.

The explanation is their widely differing views of export and import prospects. In general, the forecasters are fairly bullish about the export outlook in 1979.

Comparisons of unemployment are not included in the accompanying table because of the different basis on which the projections are made. But there is fairly general agreement that the UK adult unemployment total will rise slightly by the end of next year, after declining during the first half of this year. But the rise is not expected to be more than 50,000 to 150,000 from the present level of around 1.4m. The only main exception is Henley which expects a small decline and is also the most bullish on growth next year.

The figures in the table are on the basis of average growth comparing one year with another but the expected slowdown is shown more clearly by looking at rates of expansion during the course of a year.

The National Institute, for example, expects the rate of increase in real Gross Domestic Product to slacken from 4.2 per cent in the year to the fourth quarter of this year to 0.6 per cent in the following 12 months.

Almost all the projections are on the conventional basis of constant 1970 prices to show the underlying volume changes. A switchover to a constant 1975 price basis is now under way and this will tend to boost overall growth rates because of the sharp rise in the relative price of oil in 1974-75 and the recent build-up in North Sea production.

For example, while the London Business School is projecting a 2.4 per cent rate of expansion in total output this year at 1970 prices the increase would be 3 per cent at 1975 prices. The respective figures for next year are 1.8 and 2.5 per cent.

COMPARISONS OF FORECASTS

Percentage change year on year (at 1970 price)		Treasury (April)*	National Institute (August)	OECD (July)*	CBI Staff (July)	Chase Econometrics (August)	London Business School (June)	Henley Centre (August)	Phillips & Drew (August)	Wood Mackenzie (June)	Hoare Govett (August)
Gross domestic product	1978	2.00	3.1	2.75	2.6	2.1	2.40	2.90	2.7	2.5	3.30
	1979	1.60	2.0	1.75	2.5	3.3	1.80	3.40	2.1	2.8	3.00
Consumer spending	1978	5.00	5.1	5.00	5.1	4.6	4.60	5.20	5.4	5.0	4.90
	1979	2.20	2.3	1.00	3.5	3.0	2.50	4.30	2.3	2.5	2.90
Exports	1978	3.70	3.8	5.00	2.7	4.3	2.90	3.90	3.8	4.0	5.40
	1979	5.80	2.9	4.00	1.6	3.1	4.70	4.70	4.0	4.8	6.00
Imports	1978	7.50	6.0	5.50	7.8	9.6	7.60	6.20	5.1	6.8	6.30
	1979	8.70	3.0	4.00	2.4	5.8	6.40	5.30	3.1	4.5	5.80
Current account (£bn)	1978	0.75	0.6	0.95	below 0.5	—	0.65	0.20	0.4	0.0	0.85
	1979	0.50	1.9	1.18	—	—	−0.05	0.16	0.0	0.3	0.96
Public sector borowing	1978-79	8.50	8.1	—	—	—	7.70	7.75	8.3	8.2	7.24
(£bn)	1979-80	—	8.4	—	—	—	9.60	—	8.7	8.8	—
Price inflation average	1978	—	9.3	8.75	—	—	8.80	8.40	8.2	8.6	8.25
increase†	1979	—	11.2	7.50	—	—	11.70	9.20	10.9	9.8	8.25

* Treasury and OECD figures for 1979 are for first half of year only and are changes compared with second half of 1978 expressed at an annual rate, current account also at an annual rate.

† Inflation comparisons are for consumer prices except for Wood Mackenzie and Hoare Govett where retail prices are used.

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LABOUR NEWS

Miners fight TUC bid to halt incomes clash

BY OUR LABOUR EDITOR

MINERS' leaders are to resist TUC efforts to stop their attacking the social contract at next week's Trades Union Congress in Brighton.

The executive committee of the National Union of Mineworkers refused yesterday to entertain an amendment to their main motion for Congress put up by the Transport and General Workers' Union and designed to take the heat out of the miners' attack.

However, Mr. Joe Gormley, the miners' president, did not rule out the possibility that they might eventually have to accept the transport union's amendment.

That would leave Congress with little to argue about in its economic debate, since a very large majority of the TUC unions appears to agree on a policy of passive resistance to the Government's incomes policy.

As it stands, the miners' motion is probably the most hostile to the Government on the agenda. It asks Congress to declare its total opposition to any proposed extension of the social contract into Phase Four."

Many union leaders argue that, while income control must be opposed, the social contract as such (under whatever name) can and should continue. The transport workers are trying to minimise the risk of Congress's formally declaring the social contract ended by substituting the words "incomes policy."

Explaining the union's motives, Mr. Gormley said: "We think that this question of the social contract has been deluding a lot of people into thinking we are making a lot of progress. We are not making any progress at all."

This did not mean the union was not going to work for a Labour victory at the General Election—widely expected soon after Congress. "You are entitled to criticise your friends," he said.

Yesterday's executive noted with concern the failure of a miners' nominee to be adopted for the Parliamentary seat of Pontefract, a mining town. Mr. Gormley said the union was "very worried" at the way it was losing seats.

Pay rise for NUM leaders

THE EXECUTIVE of the National Union of Mineworkers showed its appreciation of the latest pay policy yesterday by voting itself big pay rises to take effect eight months after the last increase for the union's full-time officials.

Salary increases of between 6 and 20 per cent will be paid from next March, in a move linking union officers' pay with that of National Coal Board management grades.

Mr. Joe Gormley, NUM president, will receive more than £10,000 a year but the president's salary band will have a maximum of £13,600 a year.

Area presidents like Mr. Arthur Scargill of Yorkshire will be on a band of £7,393 rising to £9,400 after three years. Junior officials will get between £6,500 and £8,300 a year.

Dock strike halts BL car exports

By Pauline Clark, Labour Staff

ABOUT 1,500 BL cars bound for the U.S. joined the growing stock of stranded cargo in Southampton docks yesterday as the strike by nearly 2,000 dockers went into its sixth day.

Further talks between strike leaders and port employers produced little hopes of a solution. The dispute began with a minor row over oil spilled on a ladder but has since grown into a clash over general safety.

With 11 container ships having been forced to cancel calls at the port since the strike began, fears are growing that shippers will lose confidence in Britain's sixth largest cargo port.

Yesterday, a Norwegian vessel was unable to pick up the BL cars for export to the U.S.

June total in work below 1977

THE NUMBER of people employed in production industries rose in June over May, but was still lower than in June last year.

Provisional figures for the number of disputes in July show a large fall over previous months, possibly affected by seasonal factors, and the number of working days lost in stoppages in July was the lowest for a year.

Provisional figures show a dramatic fall in the number of disputes, beginning in July this year at 104 against the June figure of 181.

State workers fight 5% wage guidelines

BY PHILIP BASSETT, LABOUR STAFF

THE GOVERNMENT is facing the first public-sector challenge to its Stage Four 5 per cent wage settlement guidelines from 9,000 atomic power workers in state-owned concerns, whose claim includes increases of 20 per cent for some grades.

The success of the Government's pay policy in the private sector rests on its effective application to its own workers. Ford workers have submitted a 25 per cent claim to lead the private sector's challenge to Stage Four.

Mr. Mick Martin, public services' national secretary for the Transport and General Workers' Union, one of the three main unions involved with industrial workers employed by the United Kingdom Atomic Energy Authority and British Nuclear Fuels, said yesterday that the unions wanted to reduce the differentials between foremen and craftsmen in the industry to increase rates from the lower-paid upwards.

The claim includes an increase for craftsmen from £70 a week to £84 a week, with pro rata increases for lower grades. The craftsmen's increase, if agreed, is a rise of 20 per cent.

The claim is also for a reduction in the working week, an increase in annual holiday entitlement to four weeks, a review of allowances, shift payments being related to basic pay to give automatic rises when wage rates are increased, and a realignment of pay dates to April 1.

Although the industrial atomic workers are numerically small, with little tradition of militancy, their position in the wages round gives their claim special significance for the rest of the public sector and for the Government's hopes of making its pay limit stick.

● Union leaders met Ministry of Defence officials yesterday to discuss the safety of the Atomic Weapons Research Establishment at Aldermaston, where 12 workers were found to be contaminated with plutonium earlier this month.

Tube strikes called off

THE THREAT of one day strikes on London's Underground from next week has now been lifted, Mr. Bob Kettle, secretary of the National Union of Railwaymen's London Transport district council said last night.

The decision was made after talks between London Transport and staff representatives over overtime cuts on the Underground and other measures introduced by management.

Mr. Kettle said proposals for cuts on overtime and rest-day working had been withdrawn by London Transport.

Senior management and national NUR officials are scheduled to begin further talks on economies designed to prune £8m from London Transport's operating costs.

TGWU accepts pay deal

BY PHILIP BASSETT, LABOUR STAFF

BRITAIN'S LARGEST union, the Transport and General Workers' Union, yesterday accepted a Stage Three pay settlement for its 90,000-plus members in the industrial Civil Service and launched a major campaign on public service pay and employment designed to create 500,000 new jobs.

Union representatives from all over the country met at a lay delegate conference of the TGWU in London yesterday and voted unanimously to accept the Government's final pay offer to 183,000 industrial civil servants, which would give consolidation of £8.60 of pay policy supplements into basic rates and a 9 per cent increase on those rates.

The TGWU acceptance of the offer will lead the way for the 11 other unions in the joint co-ordinating committee. Mr. Peter Adams, representative of the Electrical and Plumbing Trades Union, said yesterday that his union would also be officially accepting the offer.

Mr. Frank Cottam, secretary of the trade union side of the committee, said the TGWU acceptance of the offer was "encouraging," but was in itself not enough for a full and final acceptance. The industrial civil servants are the main group still to settle under the Government's Stage Three guidelines.

One problem still to be resolved under the settlement formula, though, is the position of pieceworkers, who work mainly in Royal Ordnance factories. Though they are on higher levels of pay, under the current formula they have been offered a settlement equal to that offered to workers on the lowest band.

Union officials will discuss the pieceworkers' position at a meeting at the TUC on Monday if nothing is resolved this week.

The TGWU's booklet, launched yesterday, called Our Policy for the Public Sector, said that the "farce" of the industrial civil servants' negotiations for 1978 highlighted the need for "an urgent look at bargaining procedures in the public service."

The union, which has around 220,000 members in its public services group, said that public service workers faced serious and unresolved pay problems.

Local authority workers, whose Stage Four pay claim will be drawn up early next month, are £20 a week behind workers in production industries, and ancillary health workers £17.50 behind. Public administration workers in general earned only 81 per cent of the average pay for all male manual workers.

Pay settlements over the next few years should press a number of points, including consolidation of pay policy supplements into basic rates, increases in holiday leave, an emphasis on flat rate rather than percentage increases, and pay maintenance guarantees to protect the lower paid against price rises during the course of a pay agreement.

The union asked for a planning target of at least an extra 100,000 public service jobs a year for the next five years.

Music in Macedonia

by RONALD CRICHTON

In his *Journals of a landscape painter in Albania and Illyria*, Edward Lear wrote with enthusiasm of the country round Ohrid, which he calls by the older name of Akhridha, as "a scene of placid splendour." In the middle of the last century that part of the Balkans was still Turkey in Europe. Boundaries were hazy; races intermingled. Lear calls the "great sheet of water" which is said to be the oldest and deepest in Europe "the first of Grecian lakes," but evidently considered himself in Albania, a country whose savage, splendidly attired inhabitants were a source of contempt to his Italian servant, Giorgio. But there were Turkish governors and officials to be called on, and many Greeks and others, distinguished by variously gorgeous and colourful costumes — small groups of such people often appear in Lear's water-colours.

Ohrid now lies in Yugoslavian Macedonia, the Southernmost of the country's republics. The further shore of the lake is partly Albania—Sylvie Nickels summarised the complicated history of the region in her travel article of August 12. Much has gone since Lear's time. The fortress crowning the hill is an empty shell—no trace of the Turkish governor's serail. The "majestic plane" in the middle of the town is still standing—just—but the people grouped below it no longer represent "every variety of picturesque human beings." There are, though, fezzes on the heads of the older males of the Turkish community, and though the land is hardly "spangled with minarets" there are still three or four mosques in Ohrid with their pale, pointing fingers a wonderful, elegant way of fixing the attention both of the faithful Moslem and of the curious visitor.

St. Sophia, Ohrid

Corinne Cockrell

The glory of Ohrid, however, lies in the lake—deep turquoise in sunlight and beaten silver under the full moon—and in the numerous Byzantine churches. These have suffered great indignities in the course of history and are much restored. At least one of the major ones, St. Clement poised on a hilltop, has lost its soul in the process, though it is worth seeing for the outside and for the icons within. The old and historic cathedral of St. Sophia, on the other hand, has maintained its spirit in spite of hideous scars. It is a basilica-type building curiously situated with the West front facing a hill. This front, added in the 14th century to the main body of the 11th century church, is a sophisticated design of triple pierced windows, a mezzanine storey of blind arches and pillared arcade at the base. It is high enough to be seen to advantage from above but not too high to make sense from ground level.

A number of the frescoes inside have been lost, but many are preserved, and most impressive they look, presided over in the altar apse by a tall, seated figure of the Virgin, with the narrow, observant eyes and long, delicate nose of a Byzantine Edith Sitwell. The church houses the musical events of the annual festival of music and drama, which started in 1961. The acoustics are splendid. Even a grand piano sounds perfect, resonant without trace of echo—and the festival authorities have had the wit to secure for themselves an admirable Steinway. I was told (though had no chance to prove the fact) that stringed instruments, alone or in consort, come off equally well.

The festival spreads itself over five or six summer weeks. Critics and music administrators from other countries are invited two or three at a time — I overlapped with a colleague from *Le Figaro* and one of the organisers of the Warsaw Autumn. The financing of the festival, we were told, is purely a Macedonian matter. Nothing comes from Belgrade. About two-thirds of the money is provided by the official cultural fund raised by each republic within Yugoslavia, one source being a tax on the profits of commercial firms. The remaining third comes from direct donations from commerce. Is there something here to make our hungry regions think? Audiences are about half local, half tourists (including visitors from other parts of Yugoslavia). Ohrid had — unusually for these days — more British than German visitors, and what is more, they went to the music.

I heard three concerts. Paulos Raptis, a Greek tenor living in Poland, gave a recital of *arie antiche* and 19th century operatic arias, including two by Mercadante. He is a lyric tenor with strong metal in his voice. There wasn't a weakly supported or unsteady note from beginning to end, and not much mezza voce, either. A pianist from Skopje, the Macedonian capital, deputised for a string quartet from Zagreb which had promised music by Yugoslav composers unknown to us. Stela Slejanska duly slipped in a modest "Confessor's prayer" by a Skopje composer called Avramovski, but it hardly stood a chance between large helpings of Messiaen, Brahms, Bach-Busoni and Liszt. Miss Slejanska is a thoughtful, serious player, but a hint of decreasing power as the evening went on (partly due, I suspect, to the fierce television lighting, of which more later) showed she was wise to play Messiaen first.

The third evening was a brilliant affair by the Romanian Madrigal Choir from Bucharest, a highly expert body trained and conducted by Marin Konstantin, widely known outside the native country. The first chord of the opening piece by Lassus had the immediate "ping" of perfect ensemble and true intonation. Sometimes one feels the smooth surface (absolutely steady sopranos, admirable tenors) is achieved at the cost of some rhythmic vitality — the result significantly suited Palestrina better than Victoria. On the other hand, Morley's "Fire, fire!" was given with a springiness that excused the use of more than one voice to a part. In the second half came some effective pieces by contemporary Romanian composers: Pautza, Moldovan and Marbe. The *Ritual for thirsty earths* of the last-named used spatial effects with singers, also playing percussion, placed around the audience. As encores, some folk-song arrangements, more conventional but equally effective and brilliantly performed, by other Romanian composers whose names I failed to catch.

Unfortunately the first two evenings and to a lesser extent the third were bedevilled by television cameras. It seems that part at least of each event is photographed for use in a feature on the festival put out later. Well and good, but the lighting is crude (no doubt the artists suffer even more than the public) and the cameramen unnecessarily prominent. Are the authorities happy that the lights and the changes of temperature they cause won't harm the frescoes? St. Sophia, both as a monument of exceptional interest and atmosphere and as a focal point for the festival, is far too precious to risk. I missed by a few days a recital by Trevor Pinnock (charmingly referred to in the programme as "one of Britain's leading cymbalists"), who came at short notice to replace another harpsichordist, and won golden opinions. Somebody mentioned they had heard at an earlier festival a flautist called James Galway whom they thought remarkably good.

Drama is given in an open-air theatre on the hill above St. Sophia. I saw the Skopje Drama Theatre do Gogol's *Government Inspector* and *Hamlet* in lively productions rather sketchily transferred to unfamiliar surroundings. The Macedonian language being a closed book, one was the more conscious of the involvement of the audience. Only one or two children got slightly out of hand (children at concerts, on the other hand, behaved admirably). During the Gogol, one fractious tot and its mother were kindly but firmly addressed by the director of the festival with a few short sentences which ensured complete silence. Towards the end of a three-hour *Hamlet* without intervals (sensible for adults, hard on children) the director of the Skopje company, a giant of a man, turned round in his seat and bodily lifted a whimpering girl, plumping her down between himself and me—her expression was a mixture of terror and delight at finding herself in the front row.

Life is pleasantly informal. People both connected and unconnected with the event are spontaneously, imaginatively, never officiously, kind and helpful. The festival office lent me an English-Macedonian dictionary, but not, alas, the other half which would no doubt have included the vital key to the Cyrillic alphabet. French, German and Italian are all useful. The younger generation, even better linguists than their elders, make a point of jumping abruptly from one to the other. Then there are the lake trout, firm-fleshed and deep pink in colour, corn cobs grilling on charcoal in the streets, oriental sweetmeats sticky but subtle, alarming quantities of grilled meat with piles of chopped raw onion. The markets are full, among other things, of sheep's cheese and honey in the comb. The local wine is wholesome and goes down easily. One must be wary of Slivovitz at unexpected hours.

Albert Hall/Radio 3

Les Boréades

by RONALD CRICHTON

Rameau died in 1764 while his last opera, *Les Boréades* was in rehearsal. The Paris Opéra, where the work was in preparation, substituted one by Campra, though Rameau's was well advanced. Rameau was old fashioned long before he died—something that matters incomparably more in Paris than in London. He was also, as a powerful and articulate personality, someone to be feared by lesser men jealous of his long reign as France's leading composer. So *Les Boréades* languished in the archives, unheard in its entirety until John Eliot Gardiner gave a concert performance in the Elizabeth Hall in 1975. The opera still awaits staging and publication, but the second London concert performance, at the Prom on Tuesday night, drew a fair-sized audience and aroused much enthusiasm.

A second hearing confirms first impressions that *Les Boréades* is an extraordinary achievement for an octogenarian composer, whether his style was out of date or not. The opera is carefully planned, with the customary divertissement in each of the five acts plausibly introduced. There may not be the high drama and human involvement of *Hippolyte* or *Castor et Pollux*, the varied spectacle of *Les Indes galantes* or the pagan earthiness of *The Feasts of Hebe*. But there are many other things prophetic of the future, like the overture passing straight into the action, the hunting horns wafting through the opening scenes, the virtual joining of the third act to the fourth.

There are in addition remarkable embryo ensembles, one especially in Act 3 where the two Boread princes are involved with a cello continuo that sounded on Tuesday as if it had been provided by Thea Musgrave. But also other things not quirky or eccentric — a marvellous short duet for the finally united lovers through which a solo horn winds its way, several animated choruses, two virtuoso simile-ariettes and a mass of wonderful, characteristic dances, some of them familiar from the orchestral suite made by Mr. Gardiner.

It was he, of course, with the Monteverdi Choir and Orchestra, who gave the performance, with his usual drive and energy. Jennifer Smith sang the heroine Alphise, Queen of Bactria, wooed by two Boread princes but loving and loved by Abaris, an unacknowledged son of Apollo. The Sun-God finally intervenes and puts the two sons of Boreas, god of the North Wind, in their place. Miss Smith was strong and touching in Alphise's solo scene in Act 3, and adept at the often cruelly tortuous recitatives.

Abaris was a young tenor, Paul Elliott, who sustained a long and difficult role remarkably well, with tone that remained almost uniformly clear and sweet. Jean-Claude Orliac and Christopher Booth-Jones sang the two Boreads. Alain Fondary, a bass like a young Jules Bastin, was a resonant Wind-God. The experienced but on this occasion rather rasping Pierre-Yves Le Maigat doubled Apollo with his own high priest. Anne-Marie Rodde and Emma Kirkby filled the as usual rewarding fringe parts, Trevor Pinnock, Jonathan Hinden and Marilyn Sansom supplied the continuo. They, with the orchestra and choir, contributed handsomely to a long but stimulating evening.

Philharmonia in good shape

The Philharmonia Orchestra has "never been in better shape financially and artistically," according to its president Ian Stoutzker who introduced the Orchestra's plans for the 1978-79 season yesterday. There was a surplus of £4,000 during the past season, bringing the accumulated reserves to nearly £60,000. This good result was achieved by working on 180 recording sessions and performing nearly 100 concerts. Subsidy provided 18.7 per cent of the income and private sponsorship 5 per cent.

The new season will be built around three major cycles—performance of all six Chaikovsky symphonies, under the Philharmonia's principal conductor Riccardo Muti; the ten Mahler symphonies, with the principal guest conductor Lorin Maazel; and the major orchestral works of Elgar, under Andrew Davis. Other highlights will be the world première of Rodrigo's "Concierto Pastoral," which has been dedicated to, and will be performed by flautist James Galway, plus new works by Cristobal Halffter and Tadeusz Baird's Symphony No. 3.

While Ian Stoutzker reaffirmed the close relationship between the Philharmonia and Muti, which he expected to last for many years, he said the replacement for Gavin Henderson as general manager may not be announced for some months.

In November, the Orchestra will go to Japan for the first time in eight years and next month to Linz. In 1979 trips are planned to Barcelona, the Lausanne and Flanders Festivals, Germany and Austria. Guest pianists for the season include Emil Gilels, Andrei Gavrilov and Sviatoslav Richter and among the violinists are Nathan Milstein, Kyung-Wha Chung, Gidon Kremer and Yehudi Menuhin.

A.T.

Chilingirian 'in residence' at Sussex University

The Chilingirian String Quartet, the new "quartet-in-residence" at the Gardner Centre, University of Sussex, begins its term of office in September.

South East Arts is promoting the Quartet during its residency with concerts throughout the region. These include: Mayhurst Arts Trust, Wadhurst, October 13; University of Surrey, Guildford, December 6; Farnham Maltings, Farnham, May 24; Broadstairs Music Club, Broadstairs, June 13; Folkestone Arts Centre, Folkestone, June 15; Horam and Vines Cross Music Club, Heathfield, Sussex, June 16.

Arts

Ruffled Feathers

by MICHAEL COVENEY

"They're adoring every minute of watching our marriage disintegrate" wails Bridget Bonivinni (Judith Paris) in a West End cinema bar on the night of a royal premiere. The film, starring Glenda Jackson and George Segal, apparently a sequel to *A Touch of Class*, has been scripted and directed by her ex-husband Dougal Young (John Castle). He joins her beneath a blow-up of Clark Gable to resume hostilities and reveal that the George Segal part, a slob and a bore, is based not on himself, as she thinks, but on her frailties and shortcomings. *He* is Glenda Jackson.

This slight lunchtime piece by David Sullivan Proudfoot and Andrew McFarland is an odd neo-Cowardian confection to find on the London fringe. As many lines sparkle as fall flat, but there is one particularly good sequence of dialogue climaxed by Miss Paris's defence of having auditioned 50 nude men for her work as a sculptor by remonstrating that the escapade was a justifiable part of her research on a Paraguayan war memorial. Apart from that, there are amusing flashbacks to a flamboyant matrimonial period of alcoholic bad temper, nicknames and putting the children to bed.

Under Bille Brown's direction, the playing of Mr. Castle and Miss Paris (who, incidentally, is currently appearing in *Annie* as Warbuck's secretary) is well-controlled and cleverly paced. The writing's flimsily soft centre is nearly disguised, in fact, by the guarded energy on stage as the contestants stalk each other before flaring into combative life and, eventually, settling for compromise in the shape of working together on the next cinematic raid of their not very private lives.

John Castle and Judith Paris

Books page will appear in tomorrow's paper

Berlin Theatre

Comedy, Satire, Irony . . .

by RONALD HOLLOWAY

Christian Dietrich Grabbe's *Comedy, Satire, Irony and Deeper Meaning* (written in 1827) insulted Goethe and Schiller in the same way as Cyril Tourneur's *The Revenger's Tragedy* put down Shakespeare's tragedies. It's a grotesque play aimed at the literary world and social manners in Biedermeier times, one of the best satires in German literature and achieving in one deft swoop all that the disgruntled poet Heinrich Heine tried to accomplish over a life-time in his Parisian exile. Friedrich Beyer's production at the Freie Volksbühne in West Berlin fits in with the trend to revive Goethe and Schiller on the 100th anniversaries of plays they wrote.

Beyer comes from Heidelberg, where he produced Goethe's *Faust I & II* with a talented ensemble of young actors. The productions ran on consecutive evenings, preceded a similar dualsalute to Goethe by Claus Peymann in Stuttgart, and was matched only by Hansgünther Heyme's *Urfaust* and *Faust II* in two parts in Cologne. Since Grabbe's inspiration lets loose a character thrown out of the furnace known simply as "The Devil" throughout *Comedy, Satire, Irony and Deeper Meaning*, Beyer and his borrowed Heidelberg ensemble on the Volksbühne stage are able to parody a monster of their own making. This released pressure valve amounts to an hilarious spoof on German classical theatre as a whole.

Grabbe, in turn, was influenced by the young Goethe and Byron, also by Shakespeare whom he attacked indirectly in his *Treatise on Shakespeare-Mania* (the venom was, in all probability, aimed at the Schlegel-Tieck Romantic translations). Born in Detmold, his attempts at acting and free-lance writing, including plays, brought little income as he hardly fitted the mould: he was a forerunner of Realism and Expressionism, whose heroes were given to irony, violence, and a pessimistic nihilism. He died of alcoholism at 34.

The magic in Beyer's production of Grabbe is twofold. There's great fun in store when actors can bite the hands that feed them: all the cliches in German theatre, particularly the classics, are hammed to the limit in this ghastly portrait of a provincial town with a barbed-tongued poet in rags (named Rattengift), a drunken schoolmaster who slurs trivia in literature, and a devil who gets even with Goethe for writing the wrong ending to the Gretchen fairytale. Any actor worth his salt knows where the pitfalls lay—to jump head-first into them (at Beyer's urging).

But there's also the contemporary angle in the play. This is a rowdy modern-style comedy whose grim—nay, black—humour holds true today. In one scene, Spitzweg's "Poor Poet" painting springs to life as Rattengift fumbles hopelessly with a rhyme in his attic apartment; in another, the devil engineers a carnival-like shooting-ducks execution scene in a pact with a love-sick hunter with little else on his mind. Both scenes have the stark immediacy of political caricature.

One of the year's best productions, as last season blends with the current one, and Beyer appears to be a masterful director of comedy.

Howard Brenton named Creative Writing Fellow at Warwick University

A new one-year Fellowship in Creative Writing has been set up at the University of Warwick, with the financial backing of the Arts Council, and an appointment has been made—Howard J. Brenton, the playwright.

Aged 35, Mr. Brenton, a graduate in English at the University of Cambridge, has already won two professional awards: the John Whiting Award (1971) and the "Evening Standard" Best Play of the Year Award for *Weapons of Happiness* (1976). In 1972-73, he was resident playwright at the Royal Court Theatre, London. Mr. Brenton will take up the Fellowship on October 1.

LOMBARD

How not to take decisions

BY GEOFFREY OWEN

IF ONE were looking for a man to decide which of two or three proposed civil airliners was most likely to be successful in world markets, one would not immediately think of Mr. Eric Varley or Mr. James Callaghan. No doubt both men have many splendid qualities, but neither of them has more than the most superficial knowledge of the aircraft business or of business in general. Neither has any long-term personal commitment to British Aerospace or Rolls-Royce, whose futures hang on their decision. Long before the consequences of whatever they decide become apparent, they will have moved to another job, or be in opposition, or have retired from politics.

Disciplines

It is another example of the British tendency to create state-owned monopolies and to centralise decision-making in the hands of Ministers. The monopolies, and the Ministers who have the ultimate power over them, are not subject to normal commercial disciplines, but are highly vulnerable to political pressures. To demand that Ministers should be made more accountable, as Members of Parliament have been doing recently, is not the point. What is wrong is the system which requires Ministers to take industrial and commercial decisions of this kind.

Another striking illustration is the decline and virtual collapse of the nuclear engineering industry. As Mr. Duncan Burn argues in an absorbing and persuasive book*, the important question is not, why did Ministers make so many mistakes for so long, but "why did Ministers and civil servants and MPs and most advocates of the mixed economy ever think, and despite all that happened go on thinking, that Ministers could get the answers right?"

Mr. Burn shows that in the U.S. the Administration encouraged manufacturers and utilities to make their decisions on nuclear reactors on the basis of commercial self-interest; competing approaches were welcomed. The British Government, by contrast, was the sole arbiter of reactor choice. It depended almost exclusively on technical advice from the Atomic Energy Authority, discouraged competition and showed a marked preference for British-designed reactors even when the leading manufacturer and the main utility, the Central Electricity Generating Board, wanted to go for the American-designed light water reactor, as most other countries had done.

While in the UK Ministers and their civil service aides were all-powerful, the Americans gave responsibility to those individuals and organisations whose commercial survival depended on getting the decisions right. "Unlike the AEA," Mr. Burn writes, "a competitive company could only survive in the business if it could do what it promised the utilities; produce a competitive plant. Its judgements of competitiveness, of its own and alternative products, had to be objective; when its judgements were allied to those of utilities they were the most authoritative assessments. If it was wrong, it suffered, financially and in loss of business."

It is often said that the UK is too small to afford the luxury of competition in high-technology industries. The Americans can sustain competing suppliers of nuclear systems and competing utilities, but in Britain resources and technical effort have to be concentrated and some degree of centralisation is unavoidable. This is an assumption which is far too readily accepted. There have been proposals, never adequately examined, to break up the CEGB into three or four regional utilities. As for the manufacturers, it may be true that the domestic market for certain products is too small to support more than one purely national enterprise, but the need in several of these industries is for international groupings which do provide scope for maintaining competition.

Disinterested

The underlying problem is the deep-seated distrust, by no means confined to the Labour Party, of competition and the profit motive. Many people seem to believe that the "national interest" is more likely to be safeguarded by Ministers than by competition among commercial enterprises which stand to gain or lose financially from the decisions they make. According to this school of thought, it may look odd for Ministers to be deciding which civil airliner to build, where a new steelworks should be located or what type of nuclear reactor to choose, but industrial decisions of this magnitude are too important to be left to industrialists.

The only way to counter these arguments is by analysing in detail the consequences of past Ministerial decisions and by demonstrating how other countries, relying more on competition, have achieved better results.

Nuclear power and the energy crisis, by Duncan Burn. Macmillan for the Trade Policy Research Centre, £12.00.

Perils and pleasures of tastings

WINE

BY EDMUND PENNING-ROWSELL

TASTING YOUNG wines is one of the occupational hazards of wine merchants who must assess them for the purpose of purchase, as well as for those who write about wine. Although professional wine tastings are usually interesting and instructive, they are not just the carefree, enjoyable occasions that some outsiders imagine. Usually held in the morning, when palates are fresh and stomachs unencumbered by substantial meals, they can lead to jaded afternoons. Of course provision is normally made for expectoration— though often not in some foreign countries—but in fact something goes down, even if ameliorated by acompanying bread, biscuits and cheese.

In London the most ample tastings are generally arranged by the Italian Trade Centre in Savile Row. Italy produces an enormous number of different wines—about 200 of them bearing the DOC appellation—and these comprehensive tastings are organised on a provincial basis, with private firms and co-operatives each showing their range of wines on separate tables. This provides a reasonably reliable view of each province's production, except that many wines suffer from travel-sickness, and do not show at their best within a few days of arrival, even if already bottled long in advance as these wines are. Ideally all wines should have a few weeks to settle down after being flown here, but this is seldom possible.

The arrangement of these Italian tastings enables each producer to discuss and promote his wines with UK wine merchants who come to taste, but it is hard on the tasters, who may start with a dry white wine, go on to one or more reds, and then after a sweet white proceed to a sparkling wine, often the special pride of the producer; and then the same sequence must be started again at the next table.

The most recent of these tastings was devoted to the wines of Treviso in the Veneto, when, in the proud words of the press hand-out, "35 versions of nine Treviso and Venezia wines were presented to the wine trade." They included the white Tocai and Verduzzo del Piave, the local speciality, white Prosecco —dry, sweet and sparkling as well as Merlot and Cabernet, made from grape varimes originally imported from France. In vintage they ranged from '77 to '72: quite a steeplechase, calling for careful selection and strictly limited intake. As can be imagined, the wines varied a good deal. I like best the Merlots and Cabernets, perhaps because they have a slight affinity with French wines, with which most of us are more familiar. They are fruity, somewhat plummy wines. I prefered the Tocais—nothing to do with the Hungarian grapes, but from a variety originating in adjoining Friuli—to the rather heavy, dull Verduzzo: a peasant wine. One or two of the sparkling Proseccos were fresh, cleain-tasting and satisfyingly dry. Prices cannot be quoted, as they were not given, but Treviso wines are generally inexpensive. Production in the area has enormously increased in the last 20 years, and quality has risen, though they are not always consistent. Seventy per cent of output is in red wines, and as sound, good-value-for-money wines they are worth looking out for.

Young clarets are not exactly easy to taste either, for they are often distinctly immature, bitter and rather tannic. One looks for a fruity aroma and a full long taste that extends to the throat—before the wine is spat out.

The '77 clarets have not had a very good press so far, but with the '78 prospects now somewhat doubtful, they may well be more sought-after. Moreover, at a tasting of clarets offered by the Bordeaux house of de Luze, and arranged by their agents, Findlaters, some showed unexpectedly well, including de Luze's own property, de Malleret. Among the half-dozen classed growth cask-samples, Ducru-Beaucaillou, Léoville-Las-Cases and Lynch Bages showed agreeably fruity. Unfortunately prices for the '77s are no less than for the superior '76s.

Sometimes young German wines are deceptively easy to taste, for they are less alcoholic than many others, and their customary sweetness makes them agreeable. Yet sweet wines soon tire the palate, and one looks instead for a good balance of acidity that will keep the wine and help it to lose some of the early puppy-sweetness. Deinhard's admirably arranged annual trade tasting included 28 wines, basically '77s and '76s, but with a few '75s and '73s. The '77s are relatively inexpensive, good everyday wines but they lack the fruit and flavour of the fine '76s. Among these from Deinhard's own estates was a delicious Berncasteler Bratenhöfchen Spätlese, and an even finer Graacher Himmelreich Auslese. They should retail at around £4.50 to £5 a bottle. Naturally much dearer was the '76 Bernkasteler Doktor Auslese, from the largest part of that famous vineyard owned by Deinhard. A splendidly distinctive wine in aroma and flavour, it is unlikely to cost much less than £15 a bottle. Among Deinhard's own '76 Rhine wines the Winkeler Hasensprung Spätlese and Oestricher Lenchen Auslese stood out for me; retail prices should be roughly £4.00 and £6.50. With the '77s no more than moderate and '78 unlikely to produce very distinguished wine, German wine amateurs should snap up the '76s before they become rarities, as in this country they soon will.

It may sound a little hard to call Alsace wines "the poor man's Rhine wines," but the intention is not to depreciate them but to draw attention to their good value. This was shown at a tasting of Trimbach wines. As with the Germans, the '76s showed much better than the '77s. I particularly liked the '76 Riesling and the '76 Gewürtztraminer Cuvée des Seigneurs de Ribeaupierre. The former will retail at not more than £3 a bottle, the latter at about £4—the dearest wine on offer at the tasting. Alsace wines are generally more full bodied and alcoholic than German wines, but they can be distinguished and are not relatively expensive. I am often surprised that they are less popular here than they merit.

Finally, a one-wine champagne tasting. Pol Roger launched its 1973 on a Thames launch. That the boat did not reach Greenwich as planned was not the result of excess consumption, but owing to the necessity of returning under Westminster Bridge before high water. I particularly like rather fruity but dry champagne, and Pol Roger is one of these, with the '73 true to its house style: fruity but fresh. Before berthing at Lambeth Pier, a full complement aboard "looked at" the champagne over lunch as we cruised gently *entre-deux-ponts*. If wine tastings are not all beer and skittles, their ardours are sometimes mitigated.

Much improved Abdu napped to win his seventh victory

RACING

BY DOMINIC WIGAN

MANOR FARM BOY, astutely placed to land seven of his 11 two-year-old races, took the Perebrown Stakes at Yarmouth a year ago at 9-2 on and it will be interesting to see if Bill O'Gorman his handler, can do the trick again through Abdu.

The Newmarket trainer, who rides many of his young horses, has proved equally astute in his campaign with Abdu, and this afternoon the much-improved Balidar colt will be attempting to notch his seventh victory after wins at Catterick, Bath, Lingfield, Folkestone, Newmarket and Leicester.

In his last two races Abdu, one of the most improved performers of the season, has surprised a good many experienced racegoers, first on the July course at Newmarket and then at Leicester.

After winning by a comfortable 2½ lengths from the odds-on Wixoe Belle over six furlongs on the July course, Abdu showed that there is no more determined two-year-old in training when getting up close home to defeat General Atty in the Bagworth Stakes on the Midlands course.

Driven into a challenging position behind the heavily-backed runner-up—who had previously failed by half a length to give Son of Shaka 6 lb in Goodwood's New Ham Stakes —Abdu, ridden by O'Gorman, forced his head in front a few strides from the post.

The pair were followed home by Cap Ferrat, himself a winner four times from six attempts.

Provided that Abdu is none the worse for his hectic campaign, he ought to have few problems from Foetsjie, Superb Lady and Quantum Major. For forecast purposes, the lightly-raced Thatch colt Quantum Major, a bay son of the five-times two-year-old winner Smart Sheila, looks to be the answer.

Looking ahead to Ascot, Henry Cecil has decided to give the Queen Elizabeth II Stakes a miss with the Eclipse winner, Gunner B, who has now been earmarked for the Valdoe Stakes at Goodwood.

However, Newmarket is certain to have at least one resolute challenger for the Ascot race as Clive Brittain intends to saddle Radetzky. This will be the final race for the Queen Anne Stakes winner.

YARMOUTH

2.15—The Bedford**
2.45—Fast Bowler
3.15—High Roller
3.45—Irish Noble
4.15—Abdu***
4.45—Ellidiana*

Radetzky, now fully recovered from a burst blood vessel, suffered in Deauville's Prix Jacques Le Marois, will be syndicated by the British Bloodstock Agency. Judged on his exploits of late, he could wind up with a full book next year, in contrast to the handful of mares who visited him last year.

Hot spring may heat homes

SCIENTISTS believe that a reservoir of boiling water, found under a Nottinghamshire town, could be piped direct to local factories or homes.

Government researchers are preparing a report for Newark District Council saying that there is probably enough heat to supply 500 homes. Alternatively, the boiling water could go to industrial sites.

TV/Radio

BBC 1

6.40-7.55 am Open University (Ultra High Frequency only). 9.55 Paddington. 10.00 Jackanory. 10.15 Help! It's the Hair Bear Bunch. 10.35 Big John, Little John. 1.20 pm On The Move. 1.30 Mister Men. 1.45 News. 4.18 Regional News for England (except London). 4.20 Play School (As BBC 2 11.00 am). 4.45 Graham's Gang. 5.10 Boss Cat. 5.35 Captain Pugwash.

5.40 News (London and South East only).
5.55 Nationwide.
6.20 European Athletics Championships.
6.45 Dr. Who.
7.10 Top of the Pops.
7.40 European Athletics Championships.
8.10 The Hollywood Greats: Charles Laughton.
9.00 News.
9.25 Most Wanted.
10.15 I, Claudius.
11.10 Checkpoint.
11.40 European Athletics Championships (highlights).
12.00 Weather Regional News.

All Regions as BBC-1 except at the following times:

WALES—5.55-6.20 pm Wales Today. 6.45-7.10 Heddiw. 12.00 News and Weather for Wales.

SCOTLAND—5.55-6.20 pm Reporting Scotland. 12.00 News and Weather for Scotland.

NORTHERN IRELAND—4.18-4.20 pm Northern Ireland News. 5.55-6.20 Scene Around Six. 12.00 News and Weather for Northern Ireland.

ENGLAND—5.55-6.20 pm Look East (Norwich); Look North (Leeds, Manchester, Newcastle); Midlands Today (Birmingham); Points West (Bristol); South Today (Southampton); Spotlight South West (Plymouth).

BBC 2

6.40 7.55 am Open University.
11.00 Play School.
4.55-5.20 and 5.45-7.00 Open University.
7.00 News on 2 Headlines.
7.05 The British Connection?
7.30 News on 2.
7.40 Gardeners' World.
8.05 Top Gear. Le Mans sports car race.
8.30 BC: The Archaeology of the Bible Lands.
†9.00 Films of the 40s: "The Gentle Sex," starring Joan Greenwood, Rosamund John and Lilli Palmer.
10.30 Are You Being Properly Served?
11.30 Late News on 2.
11.40-11.50 Closedown, reading.

LONDON

9.30 am Treasures in Store. 9.55 Skilful in Soccer with Jack Charlton. 10.20 The Undersea Adventures of Captain Nemo. 10.35 Skippy. 10.50 Some of My Best Friends are Cannibals. 11.40 Cartoon Time. 12.00 Little Blue. 12.10 pm Rainbow. 12.30 Doctor! 1.00 News plus FT index. 1.20 Platform. 1.30 Young Ramsay. 3.25 Breakdown. 3.20 Quick on the Draw. 3.50 The Sullivans. 4.20 Dynomutt. 4.50 European Athletics.

6.35 ITN News.
6.50 Crossroads.
7.15 Survival.
7.45 "Bless This House," starring Sidney James and Diana Coupland.
9.30 Great Expectations.
10.00 News.
10.30 European Athletics.
11.00 This Sporting Land.
11.30 Night Gallery.
12.00 What the Papers Say.
12.15 am Close: Michael Burrell reads a speech by one of Shakespeare's Kings.

All IBA Regions as London except at the following times:

ANGLIA

ATV

BORDER

CHANNEL

GRAMPIAN

GRANADA

HTV

SCOTTISH

SOUTHERN

TYNE TEES

ULSTER

WESTWARD

YORKSHIRE

RADIO 1

RADIO 2

RADIO 3

RADIO 4

BBC Radio London

London Broadcasting

Capital Radio

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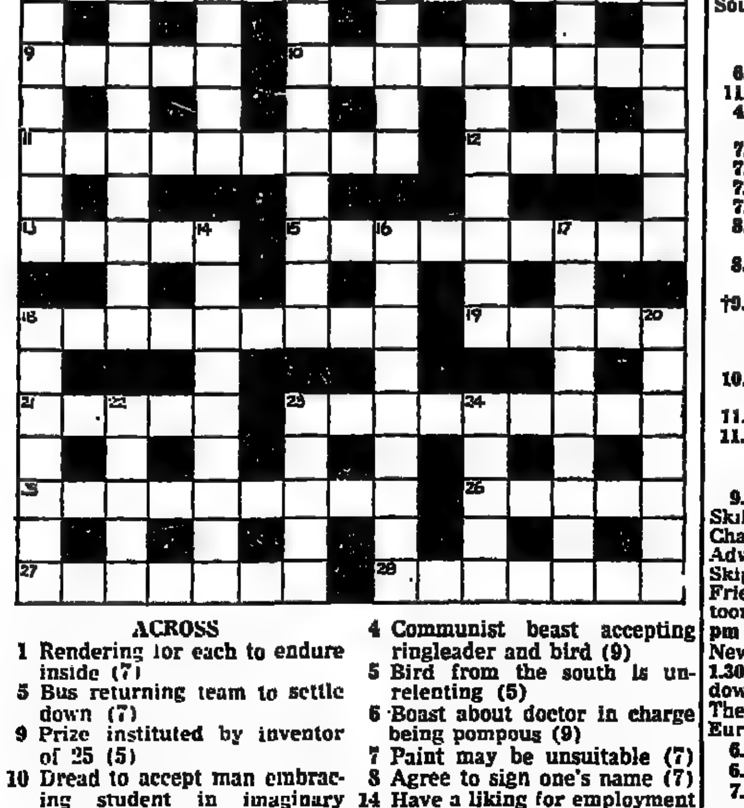


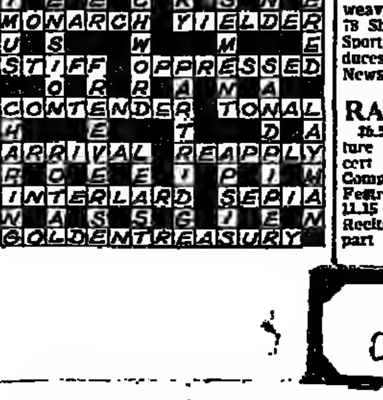
ACROSS

1 Rendering for each to endure inside (7)
5 Bus returning team to settle down (7)
9 Prize instituted by inventor of 25 (5)
10 Dread to accept man embracing student in imaginary place (9)
11 What irresonsible drivers do in turn had become chaotic (3-3-3)
12 Player is putting airman to the right (5)
13 Demonstration of strength of spirit (5)
15 A pad returned to board is versatile (9)
18 Send to South African province after one's arrival (4-5)
19 Soldier returning in vehicle for a smoke (5)
21 Gland has nothing to change (5)
23 Made an appointment outside school and set off (9)
25 Half expect to lose about four and could blow up (9)
26 Estimate the worth of prize (5)
27 Wave right inside chemist's glass vessel (7)
28 Harass people appearing in legal offence (7)

DOWN

1 Drink out of bed and fight (5-2)
2 Aspiring to suit a mob I organised (9)
3 Claw those cards not dealt (5)
4 Communist beast accepting ringleader and bird (9)
5 Bird from the south is unrelenting (5)
6 Boast about doctor in charge being pompous (9)
7 Paint may be unsuitable (7)
8 Agree to sign one's name (7)
14 Have a liking for employment in ornamentation (9)
16 Plot requiring everybody to ring men in race (9)
17 Handsome woman holding a gun but it's only a game (9)
18 Adage to demonstrate Robert Browning initially (7)
20 Coin worth only a whit (3, 4)
22 Enough drink to surround politician (5)
23 Doctor that is receiving direction for a wiper (5)
24 Part of one verse? In no degree! (5)

SOLUTION TO PUZZLE No. 3,757



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THEATRES

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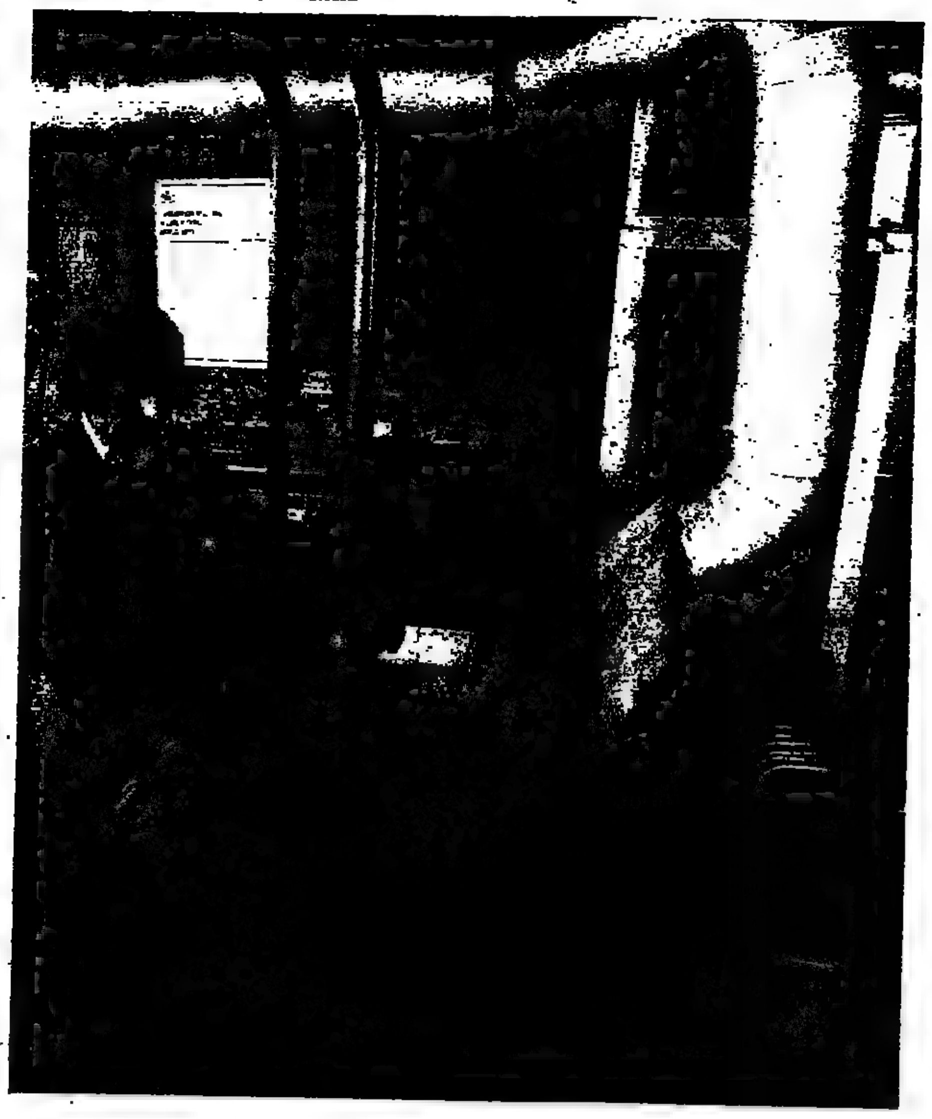

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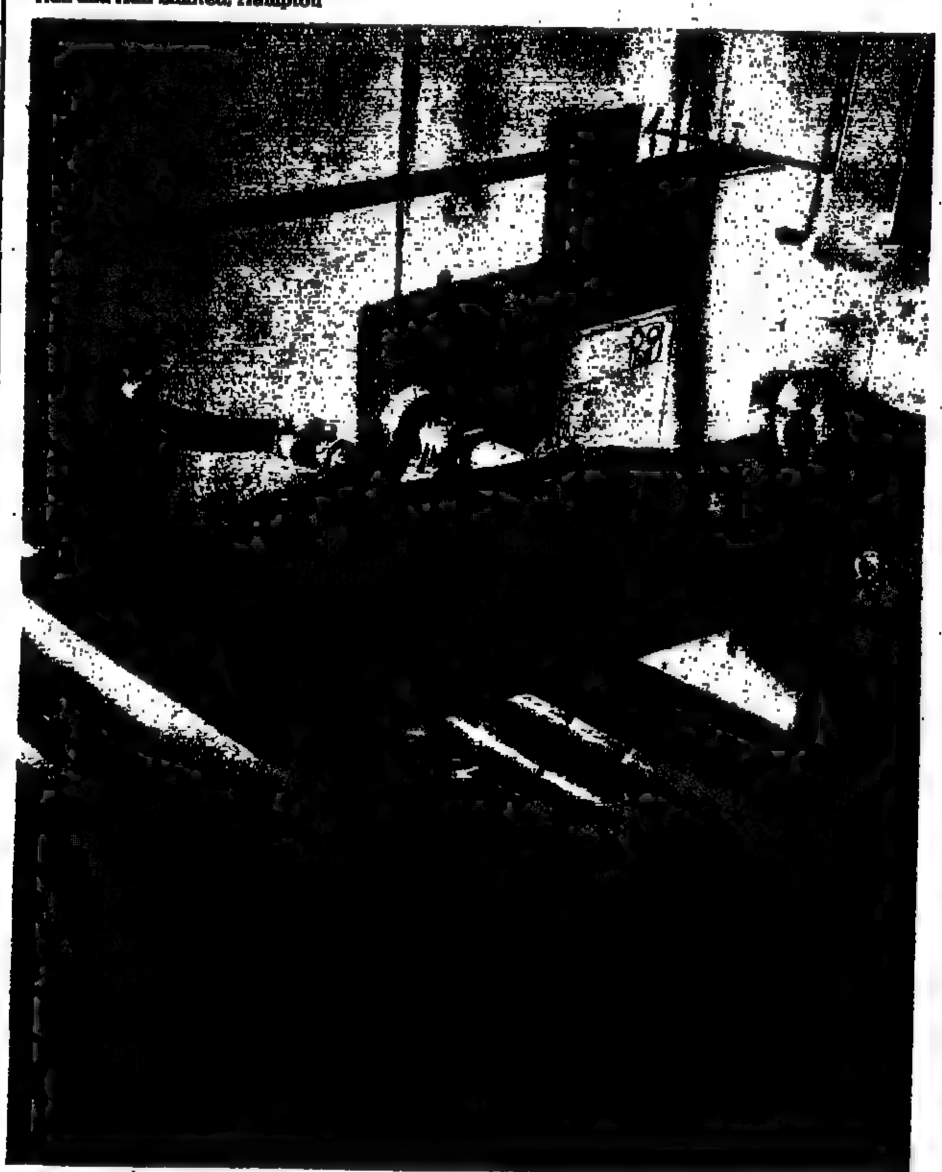

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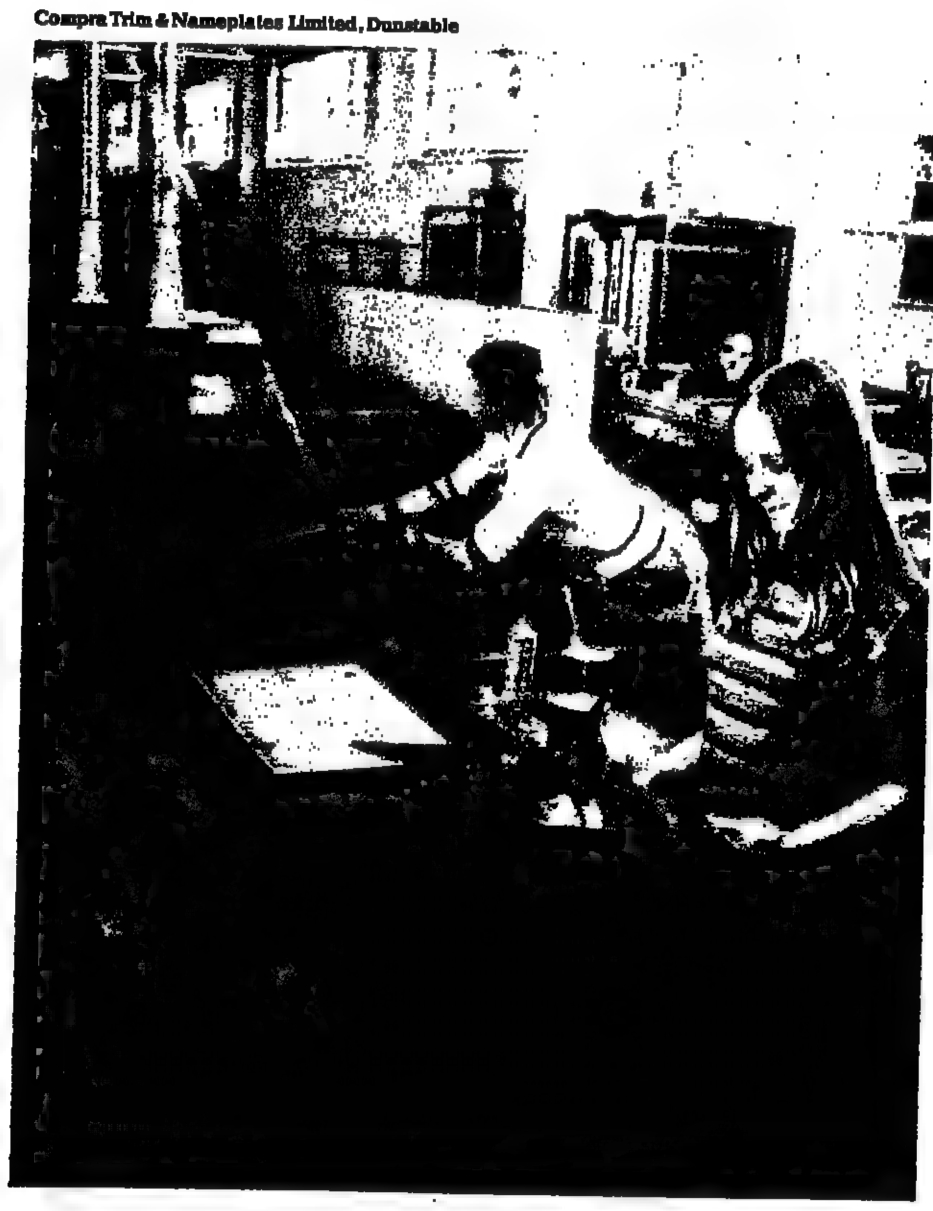

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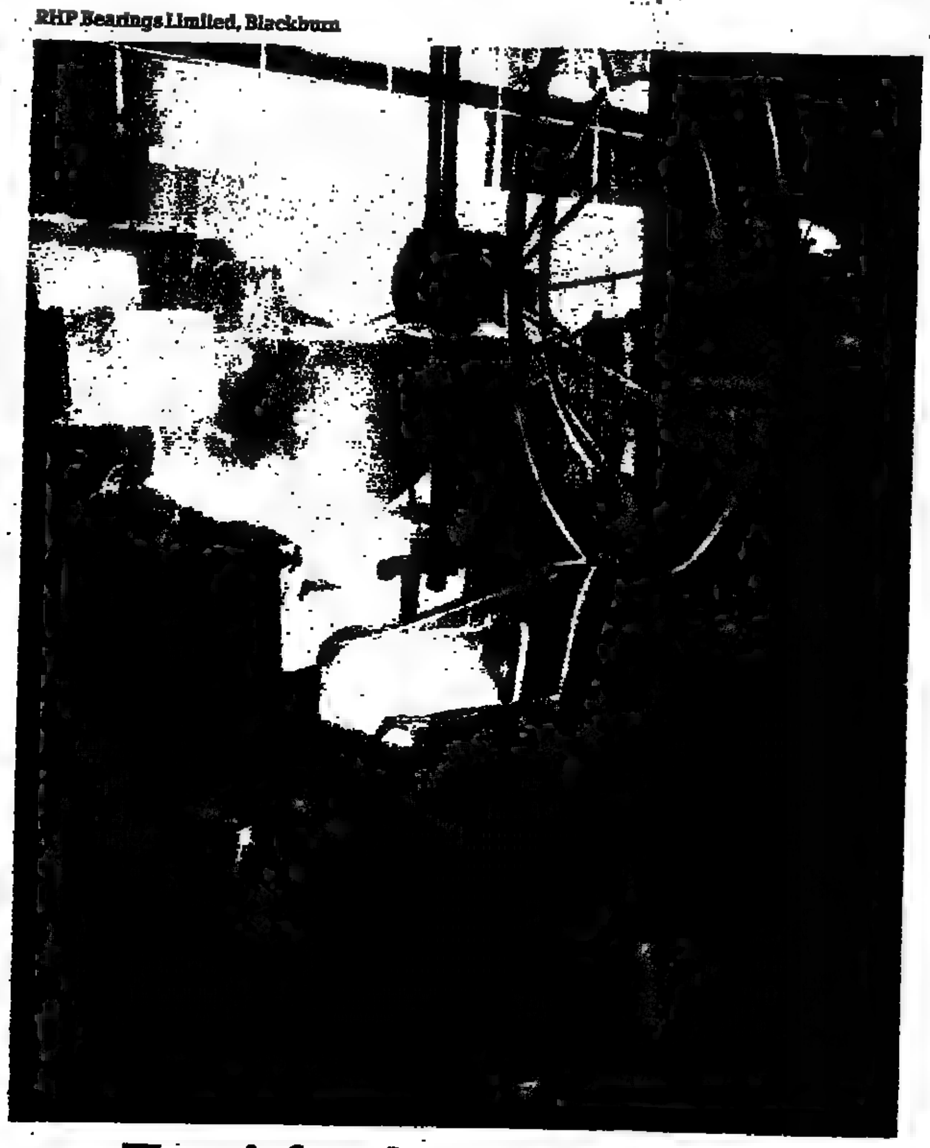

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Thursday August 31 1978

A counter to the boycott

THE ARAB boycott of Israel is designed to ban trade between Arab countries and foreign companies which are deemed to have promoted the growth of the Israeli economy or to have strengthened her war effort. Although the application of the boycott has been inconsistent and unpredictable, it poses serious moral and commercial problems for companies trading in the Middle East. Some have felt obliged to withdraw from long-standing commitments to Israel; others have avoided looking for Israeli business which would normally interest them. Businessmen are heartily sick of it and would fully endorse the comment in the report published yesterday by the House of Lords Select Committee on the proposed Foreign Boycotts Bill: "It is objectionable for those who are not party to the Middle East conflict to be drawn into it and for the exercise of legitimate economic activity to be made subject to extraneous political conditions."

The question is—what can be done about it? So far it has been the U.S., partly because of its powerful pro-Israel lobby, which has taken the strongest action. The Export Administration Amendment Act of 1977 makes it illegal for a U.S. company to refuse to do business with Israel because an Arab country demands it. In addition, U.S. companies are prohibited from furnishing certain kinds of information about their dealings with blacklisted firms or with boycotted countries where that information is sought for purposes of boycott enforcement.

Reprisal fears

Although the Act is not as strong as some opponents of the boycott had hoped, there were fears among businessmen that it would lead to reprisals in Arab countries and severely damage U.S. exports to the Middle East. It is too early to assess the effects, but first indications are encouraging: some Arab countries have amended their requirements to accommodate the U.S. legislation and individual companies have been able to secure the removal of boycott conditions in negotiating new contracts. Hence supporters of similar legislation in the UK have argued that Arab countries would be reluctant to enforce the boycott against British companies if the British Government showed a firm determination to resist blackmail.

The weight of evidence given to the Select Committee, however, was that unilateral action by the UK would damage British exports. Most businessmen argue that the UK was a less important supplier to the Arab world than the U.S. and that it would be much easier for the Arabs to switch from British to alternative suppliers. The Government supported this position and the Select Committee concluded that the risks of the proposed Bill outweighed any possible benefits. The Committee rightly pointed out that such *legislation passed by only one* European country would not have the effect of dismantling the boycott apparatus. Indeed it would add a fresh layer of statutory rules to be complied *with and make trade with the* Middle East more difficult.

Half-hearted

This does not mean that the British Government's present posture of half-hearted hostility to the boycott is satisfactory. Government officials, as well as companies, may in some cases be so desperate for every crumb *of Arab business that they carry* voluntary compliance with the boycott to unnecessary lengths. Diplomatic pressure in individual countries may bring about some relaxation of the boycott rules. As the Select Committee points out, it is not necessary for the Government to involve itself in the process of "legalising" the negative certificates of origin required by some Arab countries, confirming that the goods in question were not made in Israel and do not contain Israeli-made components. The Government should seek a consensus among European Governments on ways of dealing with the boycott, but in the meantime the American example should encourage a rather more determined stand in support of the principle of non-discrimination.

Barriers to efficiency

THE NEED to improve the rate of productivity growth has been the one constant in the recurrent British planning experiments of the past generation. Yet, *as figures in the latest* Department of Employment Gazette indicate, the UK's productivity performance has deteriorated rather than improved in recent years. The slight rise in employment in production and manufacturing industries in June and the broadly flat trend since last autumn point to only a slow rise in output per head.

Over the first-half of this year manufacturing productivity appears to have been less than 1 per cent. higher than a year earlier, while rising output in the capital intensive North Sea oil sector has ensured a gain of around 1½ per cent in production industries generally. This is hardly much reward for the self-financing productivity schemes allowed under the pay policy which have added about 2 per cent to the increase in earnings in the past year.

The deterioration

This has occurred at a time of buoyant consumer demand in the UK and at possibly around the peak of a cyclical upturn. The deterioration is shown even more clearly by comparison with the previous cycle — not only was output per head in production industries in the first half of this year less than 1 per cent higher than the previous *peak at the end of 1973* but it also represented an improvement of only 7 per cent from the 1975 trough. In contrast between early 1971 and the end of 1973 productivity rose by nearly 12½ per cent.

The UK has not been alone in experiencing a sharp reduction in its rate of productivity growth since 1973. With the exception of West Germany there has been a similar phenomenon of firm or rising employment and slow output growth in most other major industrialised countries. This has prompted the Organisation for Economic Co-operation and Development to note that efficiency at creating inefficiency has been widespread. Britain, however, appears to have been more efficient than most in this respect since its underlying rate of productivity growth has fallen back by more than the average.

There is no clear-cut explanation for this but rather a set of plausible possible reasons. The OECD has noted in relation to industrialised countries generally that the "productivity deceleration almost certainly reflects the effects both of various employment-supporting measures and the lags between changes in output and employment but may in addition reflect some switch in demand to the lower productivity service industries." The UK's poorer than average performance can in part be explained by its relatively larger job preservation schemes — currently keeping around 200,000 people directly off the unemployment register. In addition, the efficient use of labour has not been helped by the Government's various employment protection and redundancy measures, leaving aside the direct and indirect impact of industrial aid.

These measures could be regarded as an acceptable price which the rest of the community is prepared to pay temporarily—through taxes and higher prices—to reduce unemployment and to ease longer-term changes in a period of severe recession. The problem is that these employment schemes are not temporary and are being extended during the current period of recovery even if the number benefiting is no longer rising.

Distorting effect

There is a distorting effect on the efficiency of the labour market as a whole from the apparently permanent policy of employment support. The result has been to ossify existing structures, both directly and indirectly, via the influence on *the attitudes of managers and* trade union leaders throughout industry. The slow growth of productivity in this way exposes the inherent contradiction in the Government's industrial policy between its short-term desire to preserve jobs and the long-term goals of improving efficiency as enshrined in the industrial strategy.

THE NATIONAL ENTERPRISE BOARD

The State's new businessmen

BY JOHN ELLIOTT, Industrial Editor

DURING the past few weeks the National Enterprise Board has received a considerable amount of publicity, some of it favourable and some highly critical. It has been attacked for being reckless with public money in investing *up to £50m in its new INMOS* micro-chip company based on the skills of three electronics engineers, and it has won acceptance from two clearing banks and the firmly private-enterprise Industrial and Commercial Finance Corporation in three investment projects.

While it has won this respectability and acceptance as a commercial organisation, its public sector status has led to a fierce argument with the Commons Public Accounts Committee which is trying, so far without success, to make the *NEB reveal details of its con*fidential business transactions.

What all this means is that the NEB has been performing quite skilfully for an organisation that was launched three years ago by Mr. Anthony Wedgwood Benn to spread State ownership into profitable private industry and which has been threatened with the axe—or at least the pruning shears—of Sir Keith Joseph if the Conservatives win the next General Election.

SIR KEITH JOSEPH: . . . some slight lowering of the axe with which he has threatened the NEB

SIR LESLIE MURPHY: . . . operating a flexible policy with a low public profile

Good chance of survival

As a result of its activities, chances of the NEB surviving as an example of state ownership with an entrepreneurial face under a future Conservative administration are now stronger than they were just over a year ago, when Lord Ryder vacated the Board's chairmanship in favour of his deputy, Mr. (now Sir) Leslie Murphy.

During the year Sir Leslie has used skills learned in earlier jobs as a civil servant, businessman and merchant banker to operate a flexible policy with a low public profile. *While this* has led to criticisms that his philosophy and strategies have rarely been spelt out (for example, when the NEB successfully bid £20m for the Fairey companies last November), industry and the financial institutions have been privately coaxed into co-operation.

Even Sir Keith Joseph and fellow Conservative politicians now see some future role for a NEB. Like leaders of other groups that include Liberal and Tribune MPs and the ASTMS trade union, Sir Keith has been entertained and talked to by Sir Leslie (himself a known Labour supporter). While such people all have their own ideas *of what the NEB ought, or* ought not, to be, they have all become less strident in their criticisms.

At the same time, the low-key approach has fitted in with the cautious, non-controversial front adopted to sensitive industrial and other issues by the Prime Minister, Mr. Callaghan, *who intends to make the NEB* a central feature of the industrial part of his general election strategy.

He showed how he rates it when he threw an unusual Downing Street dinner party for about 45 people early last month at which he made Sir Leslie the star turn. The guests included Tory MPs (Sir Keith pleaded other business), top CBI and TUC leaders, and senior Cabinet Ministers and civil servants, as well as representatives of the NEB's parallel agencies in Scotland, Wales and Northern Ireland. After a fairly quick dinner, Mr. Callaghan said he wanted to thank the NEB for its work and then launched a 1½-hour session involving Sir Leslie making a short speech and answering questions.

The event was more significant for the fact that it took place than for what was said, although two important points did emerge. The CBI people admitted their members rarely, if ever, complained about NEB activities, while others at the dinner called for more NEB activity in developing the regions—a point that will be in Labour's election manifesto.

But while Sir Leslie and his colleagues have been successful at this general image-building and propaganda about their operations, they have yet to produce many major commercial or industrial achievements.

Perhaps their main success so far is the turn-round in the fortunes of Ferranti, which will be floating off some of its shares shortly. But BL remains a problem, and the best that Sir Leslie and his colleagues have been able to do so far is to set it up with new top management and give it a fresh start. Among the other "lame ducks," the Alfred Herbert machine tool business is still in trouble and Rolls-Royce has several lean years ahead.

There have also been some failures with the NEB's early investments and attempts to work out industrial strategies. In particular there has been controversy over its intervention in the tanning industry, while efforts to reorganise large industries such as electronics and power engineering have not succeeded.

One NEB company — Hivent — has been closed down in the North-East and there have been rumblings over the private medical care interests of United Medical Enterprises, in which the NEB invested to boost hospital equipment exports. The exports field also saw two earlier failures in jumbo contracting when consortia including the NEB did not win orders for a Venezuelan railway and a Middle East power station. Now the NEB is generally keeping out of such one-off export liaisons and is instead looking for more permanent arrangements like the medical company. These include a possible joint venture for a large-scale builders' merchants business in Jeddah selling UK-made building materials and components to Middle East contractors.

Such a range of diverse activities prompts the major criticism about the NEB that, apart from its "lame ducks," it is little more than a motley assortment of businesses that have little in common apart from the fact that they have caught the eye and imagination of Sir Leslie and the dozen senior staff who help him spend the £1bn state cash he has had available.

The NEB however sees its work *as falling into clearly* defined areas: helping its lame ducks; boosting exports by encouraging overseas marketing ventures; filling what it sees as the equity gap for small and medium-sized businesses, especially in areas of high unemployment; and fulfilling an industrial strategy role by rationalising industries and encouraging new technology. This is the basis of its investment and management corporate plan, which it submits to the Government each November identifying priority sectors of industry for its activities—micro-electronics and computers, for example, were at the top of last November's list.

Apart from special arrangements for small firms, the plan envisages investments normally of not less than £100,000 with the NEB generally taking an equity stake of not less than 20 per cent. As it said in its last annual report, it has a "firm policy of not interfering in matters of day-to-day manage*ment.*" It sets up a system of agreed regular reporting from the company and usually requires a five-year strategic plan up-dated each year. It also seeks the right to appoint one or more directors to the Board and, in some cases, to approve certain senior management appointments.

Often the selection of new top management is the NEB's major contribution to the running of its acquisitions (as happens, for example, with Fairey and, more recently, with Monotype). Senior staff from the NEB will then keep in regular touch with the company to monitor progress.

The NEB's ability to assess the viability of companies and the *capabilities of businessmen*, as well as to find new top executives, was a major attraction to financial institutions in recent deals. These involved Barclays Bank joining up to rescue the Monotype printing machinery company, the Industrial and Commercial Finance Corporation jointly investing in BTB (Engineering) of Blackburn, and the Midland Bank forming a new joint company based on the North-East to experiment in funding small firms.

In the case of Monotype, the NEB analysed the company's future and then found it two new top directors. In the North-East, the Midland wants the commercial and industrial experience of NEB staff to complement the more general experience of its High Street bank managers.

These deals are specially significant because they show the NEB becoming accepted by financial institutions in arrangements that may well not have been conceivable a year ago. This is important *not only for* practical business reasons but also because it may make it harder for a future Conservative Government to unscramble the NEB's entrepreneurial activities in line with the preferred policies of Sir Keith Joseph.

Two of the deals are also important because they have helped to establish the reputation of the NEB in the regions, where up to now its local offices (backed up by regional boards) had made only a limited impact. The BTB (Engineering) project emerged from continuing informal contacts between the NEB's Liverpool office and the ICFC in Manchester. The North-East small firms scheme was also a local NEB initiative. It establishes a link between the NEB and individual Midland Bank managers and may soon be extended to Merseyside.

The most significant example of the NEB finding entrepreneurs and top directors to run its businesses is the INMOS micro-chip company set up with one UK and two American micro-electronics experts. Sir Leslie believes it is essential to motivate people financially and, as a result, the three founders of INMOS and other key employees will have the opportunity to purchase up to 27.5 per cent of the company's voting shares. This is not the first time that the NEB has used State funds to boost the businesses — and potential personal profits — of entrepreneurs. It has done the same thing with Sinclair Radionics and INSAC Data Systems. And, in a somewhat different situation, it has approved the purchase by Mr. *Derek Alun-Jones, who it* appointed managing director of Ferranti, of a sizeable block of shares in his company earlier this year.

But the INMOS initiative is the biggest example so far and is thus the best demonstration of the new sort of mixed economy business that Sir Leslie and his colleagues are designing in place of the more traditional nationalisations of the past. The same formula could not of course be applied to the NEB's loss-makers, although the proposed BL incentive scheme for *manual workers* could be extended upwards to top management.

Nevertheless, the NEB has in the past year developed a signicant type of state intervention. In so doing, it has not followed the early Wedgwood Benn hopes that it would ruthlessly buy its way into the major successes of British industry; nor has it tried to take over and reorganise industrial giants as some people expected Lord Ryder to attempt. Nor has it developed as a national holding company for all state industrial intervention — the way it has steered clear of Chrysler both three years ago and more recently illustrates that.

Instead, it has, with INMOS, shown one way of mixing the inventiveness and ambitions of the scientist and entrepreneur with the financial power of State funds. Of course there *will still be those who argue as* a matter of principle that the private sector of industry would do better left entirely alone.

The INMOS venture may well turn out to be a major factor, in three or more years time, in deciding the outcome of that argument — if a Conservative Government does not try to dismantle both it and the NEB's entrepreneurial activities in the meantime.

MEN AND MATTERS

The Chinese upstage Canute

Anything the Soviets can do the Chinese can do better — or vice versa. That has long seemed the case in the cold war between the two so I suppose it was inevitable that, once Moscow talked of diverting rivers to run southwards instead of northwards, Peking would respond. Its answer to the *Soviet Siberian schemes is to* dredge up its own plan. Needless to say in this case the river, the Yangtze, is being moved northwards not southwards.

The problem for the Chinese is that the south of their country has ample water but the north has too little. But now our Peking correspondent, John Hoffmann, tells me that waters from the swollen and wasteful Yangtze are to be pumped 1,000 kilometres to the thirsty environs of Peking.

The scheme, China's most ambitious hydro-engineering project, foresees taking 30bn cubic metres of water each year from Yangchow, near Nanking, uphill and down, across the high-bedded Yellow River. The water is to be raised by 30 *pumping stations on a 15-stage* "staircase." The volume involved is equivalent to one-half of the flow of the Yellow River but will take only one-thirtieth of the Yangtze's flow.

It is almost a disappointment to find out that the project, like so many larger-than-life Chinese achievements, has been done before. The new waterway is *to follow the course of the his*toric Grand Canal, dug about AD 600 by the Sui Emperor, Yang Di. He wanted to be able to travel comfortably from his capital at Hangchow to Loyang to see the flowers bloom in the spring. He drafted a million peasants to excavate the canal. Such extravagance was soon to make him the last of the Sui dynasty's two monarchs. While Yang Di was messing about with boats, his Tang enemies were using their energies to build armies.

The canal was rebuilt during the era of Mongol supremacy in the 13th century and extended some 200 miles to Tientsin, the destination of the new project. This will involve the re*dredging of the old canal* and, in certain areas, its re-routing.

As a result, 4m hectares of land will be newly irrigated and 18m hectares of swampland drained. To whom should credit go for reviving a waterway which makes the Panama Canal seem little more than a puddle? To Chairman Mao, of course, with his plan from the 1950s given the blessing of Chairman Hua this year.

"You could be waiting here in the comfort of your very own office — contact our letting agents . . ."

Cheap at the price

It is. American Express announces, a "Very Special Offer Indeed": no less than three nights at the Carlton Tower, "London's most exclusive hotel," for two people at a mere £216.

That price includes breakfast and dinner but continued to seem daunting even when the hotel told me that it represented a discount of 35 per cent on the normal room rate. Why was such a discount necessary in the high autumn season? I asked — only to be told that business was not as bright as it had been in Jubilee year.

U.S. businessmen are staying fewer nights and the hotel wants to encourage its U.S. business clients to bring their wives along for the weekend. And what has been the response to an offer so hard to refuse? "Not at all good."

Claim allowed

My note last week about tax-deductible fines in Canada has prompted a reader to ask whether bribes vital to carrying on business qualify as a legitimate expense for tax purposes. *The answer, surprisingly, is* "yes."

The Salmon Commission on Standards of Conduct in Public Life, set up after the Poulson scandal in 1974, did look into the question of building the word "honest" into the phrase "wholly and exclusively incurred for business." But nothing was done, and the Inland *Revenue tells me that even com*missions that could be looked at askance in another quarter would not necessarily be excluded — though the inspectorate might want proof that such payments were actually made, and the name of the person concerned: "This might be a practical difficulty," said a spokesman.

BL, formerly British Leyland, took four days to process my question of how its famous "ex gratia payments" were entered on tax returns. "Any commission payments are tax-deductible," said one of the two spokesmen empowered to handle the delicate subject of the alleged slush fund: "We stick by the rules. Ask the Inland Revenue," he went on, adding a trifle irascibly: "There is no slush fund."

I asked him whether BL proposed taking legal action over a newspaper article a fortnight ago which alleged, with the names of the Swiss bank accounts involved, secret payments of £700,000 and £335,000 to a prominent Saudi and one of his compatriots, and £390,000 to Shari Alexane of Egypt—money supposedly received as a consequence of a contract with the Egyptian army.

I was told that BL did not wish to make an announcement about that just now. And was there any comment on the contents of the article? "No."

Miscalculation

The corporate face of Toshiba (UK) is still a trifle red over a full-page colour supplement advertisement for its micro-miniaturised, paper-thin LC858WA calculator. "An amazing amount of precise functions are included," glows the text — at a cost to Toshiba of just under £4,000—"four arithmetic calculations, mixed as well as sign change, constant power, add-on/discount, memory calculations." Whatever the abilities of this cunning device, the name that appears on it in the photograph is "caluculator" (sic). Toshiba tells me the all-too-human mistake was introduced by a photographer doing a spot of touching up: "It does not matter," said a spokesman. "You cannot get this model in Britain anyway." So why the advertisement? "There has been some sort of mix-up at head office in Tokyo . . ."

Observer

FINANCIAL TIMES SURVEY
Thursday August 31 1978

Aerospace

This has been a dramatic summer for the world's aerospace and airline industries, and they go to this year's Farnborough Air Display conscious that the decisions already taken and those that are likely before the end of the year will reshape the manufacturing and operating sides of world aviation for the rest of the century.

Period of major growth ahead

By Michael Donne
Aerospace Correspondent

AMONG THE most significant of the aircraft manufacturing decisions already taken this summer include that by Airbus Industrie, the European consortium building the increasingly successful A-300 Airbus, to launch the new A-310, 200-seater version, backed with substantial orders from such airlines as Air France, Lufthansa and Swissair, with options from such U.S. airlines as Eastern. The launch of the 310 was swiftly followed by the decision of United Air Lines of the U.S. to buy the Boeing 767 twin-engined airliner, effectively also launching that programme on to world markets and providing Airbus Industrie with a powerful competitor.

More recently, Lockheed of the U.S. has made it clear that it is also in the battle for the big "200-seater markets" of the future, with the Dash 400 version of the TriStar, but McDonnell Douglas of the U.S. has decided not to compete in this section of the market, and has shelved its original DC-X-200 design, preferring instead to concentrate on its plans in other areas, including the continued development of its highly successful DC-9 series, further versions of the DC-10, and development of the short-to-medium range Advanced Technology Medium Range (ATMR) transport.

These decisions are likely to be supplemented soon by further major developments. Britain has been discussing at government level with France and West Germany for several months the terms for a UK resumption of membership of the European Airbus Industrie consortium, to help develop the A-310. This also carries with it the longer-term question of whether the European consortium will develop a new series of short-to-medium range airliners in what is called the Joint European Transport (JET) programme, and whether the UK would also share in such developments. These latter aircraft would be competitive with two major ventures proposed in the U.S.—the twin-engined Boeing 757 and the McDonnell Douglas ATMR—in either of which Britain could have a stake if it did not wish to participate in the JET programme.

At the same time formal Government approval for the development of several new Rolls-Royce aero-engines is awaited—the Dash 535 version of the RB-211 which is on offer for both the 757 and ATMR ventures, and the proposed RB-432 "Spey replacement" and the smaller RB-401 engine for the next generation of business jets and other light transports. All of these engines are of vital significance for the long-term future of Rolls-Royce in world aero-engine markets.

Approval

These are not the only actual or potential developments this summer on the aerospace manufacturing scene. In Britain the Government has given approval for British Aerospace to launch the £250m Type 146 "feeder-liner," at the same time giving British Airways permission to buy 19 Boeing 737 short-haul jet airliners for the immediate replacement of its ageing Trident Ones and Twos, and One-Elevens in its fleet, with the additional requirement that the airline also negotiates with British Aerospace for purchase of between three and six new One-Elevens.

While this latter decision may have appeared to be a blow to the longer-term prospects of the One-Eleven, that aircraft in fact now has a secure future as a result of the deal between British Aerospace and Romania for the eventual provision of up to 80 aircraft for the latter over the next 15 years, of which most will be built under licence in Romania, while British Aerospace is also now exploring the prospect of a major One-Eleven deal with Japan, also involving some manufacturing under licence there.

The main reason for this flurry of activity in the aerospace manufacturing scene is the realisation that the world's airlines are now moving closer to a period of major re-equipment with new aircraft, as a result both of a recovery in the rate of growth of world air traffic, and new government decisions in the U.S. and elsewhere that have tightened up noise regulations in such as way as would make many of the airlines' existing fleets unacceptable at major airports in the mid-1980s. This situation has coincided with the fact that many of the existing short-to-medium haul jets are ageing anyway, and are becoming increasingly expensive to run as fuel costs rise. The net effect of all these factors is the need to replace the fleets.

Outlays

This re-equipment tide that is just about to flow through the world's airlines is expected to involve outlays of some £40bn up to the mid-1980s on about 3,000 or more airliners. While this demand will be spread across the entire spectrum of types, from the existing Boeing 747 Jumbo jets down to the small feeder-liners of the 146 type, most of the demand seems likely to occur in the short-to-medium haul field, which is why there is so much emphasis on the new generation of 200-seaters and smaller 130-180 seaters. Thus, the manufacturers are heading for a sales bonanza that could rival, if not exceed, the inflow of the new generation of jets that replaced the piston-engined and turbo-propeller era of the mid to late 1950s.

The general belief is that this re-equipment tide is likely to be swift, and that within a little more than five years or so, a substantial proportion of the orders for the rest of this century will have been placed as airlines scramble for places in the delivery queues so as not to be left at a competitive disadvantage, or without adequate new equipment in 1985-86 when the new noise regulations become effective and render obsolete much of today's fleets. Thereafter, there will be a slacker rate of growth, but nonetheless sales should remain at reasonably high levels through the rest of the 1980s and into the 1990s, if traffic growth continues at even an average of 6 to 8 per cent a year.

But if as a result of traffic growth and new governmental regulations that will enforce fleet obsolescence, the manufacturers seem headed for a long period of good business, the airlines themselves have some considerable problems to overcome. Among these is the mounting pressure from the public for ever-cheaper air fares—as evidenced by the undoubted popularity this past summer of such cheap-rate fares as Sir Freddie Laker's Skytrain and the competitive scheduled airlines Stand-by and Budget Plan fares. But while these cheap rates have been popular with the public, there is still some doubt as to their impact on airline profits, especially on international routes such as the North Atlantic.

While inside the U.S. there seems to be little doubt that the rapid spread of cheap fares has improved load factors and contributed to profitability this past summer, on the international routes a much greater degree of caution prevails and most airlines flying the North Atlantic believe that there is danger in pushing the cheap-fares revolution too far too fast and they are not yet prepared to admit that cheap rates are generating new traffic, and thus profits, by filling seats that would otherwise remain empty.

The exception to this is undoubtedly the Skytrain, which has been a resounding success in terms of full aircraft, long queues of would-be cheap fare travellers outside Victoria Station in London and profits in Sir Freddie Laker's balance sheet. So strongly has the idea of Skytrain prevailed that the U.K. Government felt constrained recently to uphold the earlier Civil Aviation Authority decision to award Laker Airways another Skytrain route, to Los Angeles.

While this cheap-fare revolution has been in progress a quieter revolution, but a revolution nonetheless, has been in progress within the scheduled airline industry itself, with a radical revision of the regulations of the world's airline "Parliament" — the International Air Transport Association—designed to enable the scheduled airlines to cope more effectively with rapidly changing conditions in the market place.

Perhaps the most significant of these changes are those enabling airlines to compete more directly in fares and conditions of in-flight service than has been possible for many years. Much of the impetus for these changes—which are still subject to approval by the governments of the airlines concerned—has come from the governments themselves and not least the U.S. Government, which have shown themselves increasingly impatient with the cumbersome procedures.

These changes are still being discussed inside IATA, but they are expected to be finalised this autumn, and to go to governments for approval later this year or early next, with full implementation expected next summer. If they fulfil the hopes of many of the world's major airlines, they should revolutionise the competitive ability of the scheduled operators, and help give an impetus to traffic growth, which in turn is likely to stimulate demand for new aircraft equipment in the period immediately ahead. The big worry behind all this is that the airlines do not know just how far this new era of cheap fares will go, and whether greater competition is likely to generate traffic growth, and thus stimulate profits—for it is only from higher profits that the airlines will be able to meet the re-equipment bills that they know they are going to face in the years immediately ahead.

While there is currently much preoccupation with the civil aerospace scene, the military aircraft picture is also bright. Despite efforts by the U.S. to de-escalate the arms race, demand for military aircraft world-wide remains strong, and in NATO alone there is considerable pressure to build up combat aircraft forces particularly to counter the current NATO imbalance against Warsaw Pact of 2.4 to 1. In Western Europe, production of the General Dynamics F-16 is building up rapidly, while the Anglo-West-German-Italian Panavia Tornado is in full production to meet an eventual requirement for 809 aircraft.

Beyond the Tornado, work in Britain is under way on the evolution of a new advanced tactical combat aircraft, intended as a replacement for the Jaguar jet strike-trainer and Harrier vertical take-off aircraft in the late 1980s, known at present only as Air Staff Target 403. This is eventually likely to be a major international collaborative venture, involving several hundreds of aircraft and costing several billion pounds in research, development and quantity production. Current work is involved on refining the design concept to meet not only the RAF's requirements, but hopefully also those of other European countries which might have a requirement for a similar aircraft in a similar timescale, thereby enabling an international collaborative programme to get under way.

Also in the military field, Westland Aircraft of Yeovil, is preparing a new design for the replacement of the big Sea King helicopter for the late 1980s, known as the WG-34. Here again, a major programme is envisaged, with international collaboration being sought from the start so as to ensure the widest possible market and the greatest spread of the costs burden.

Apart from all these considerations, there are some other major long-term areas of vital significance for the UK aerospace industry that the Government needed to consider in planning future programmes. Of especial significance in

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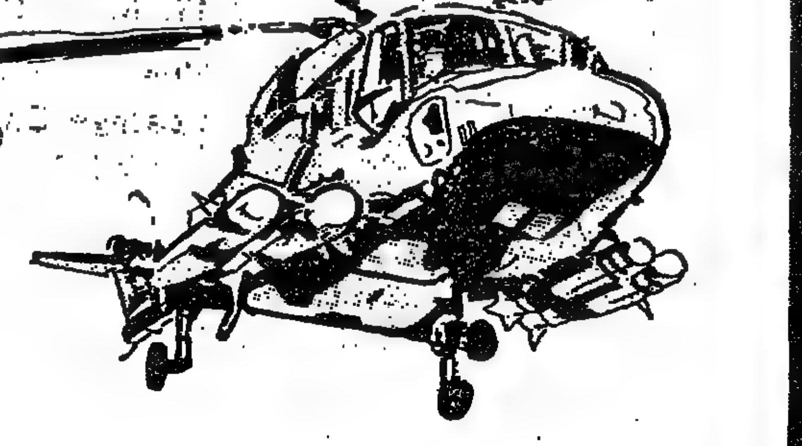

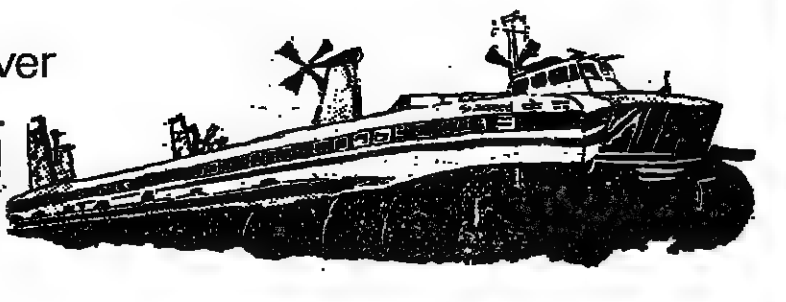

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New name heads Britain's effort

ONE OF the major changes that will be apparent to all the visitors at this year's Farnborough air display will be the emergence of a new name, British Aerospace, in place of several famous names that have dominated the show for many years past — British Aircraft Corporation, Hawker Siddeley Aviation, Hawker Siddeley Dynamics and Scottish Aviation. These companies have now been nationalised, and their individual identities merged into that of the new organisation, which now represents the biggest single entity in UK civil and military airframe, guided weapons and space research affairs.

It is important, however, to make that distinction, for although British Aerospace, with nearly 69,000 employees, is a dominant voice, it does not represent the entire UK aerospace industry. Operating independently of British Aerospace, under the separate aegis of the National Enterprise Board, is the State-owned Rolls-Royce, with close on 60,000 workers and a turnover of over £700m last year, of which £318m were in exports. In addition, the UK aerospace industry includes Short Brothers and Harland, the light transport aircraft, missiles and general aviation engineering company of Belfast with about 7,000 workers, now also state-owned but operating under the aegis of the Northern Ireland Government.

Totally independent of these State-owned organisations, however, there are many private-enterprise companies. Prominent in the manufacturing field is the Westland Aircraft Group of Yeovil, which includes Westland Helicopters and the British Hovercraft Corporation as well as the specialist engineering company, Normalair-Garrett. A smaller, independent light transport aircraft manufacturer is Britten-Norman (Bembridge) of the Isle of Wight, building the Islander and Trislander aircraft, and which is now being taken over by Pilatus Flugzeugwerke of Stans, near Lucerne, Switzerland, which is part of the Oerlikon-Buhrle group.

Supporting

In addition to these direct manufacturers of aircraft, missiles, hovercraft, helicopters and space equipment, at least another 80,000 workers in the industry are employed in the equipments, components, systems and other ancillary fields directly supporting the airframe, engine and missile manufacturers, through such major private enterprise groups as the Dowty Group, GEC-Marconi Electronics Group, Lucas Aerospace, the Plessey Group and Smiths Industries, with Ferranti also a major contributor but which is now a subsidiary of the National Enterprise Board.

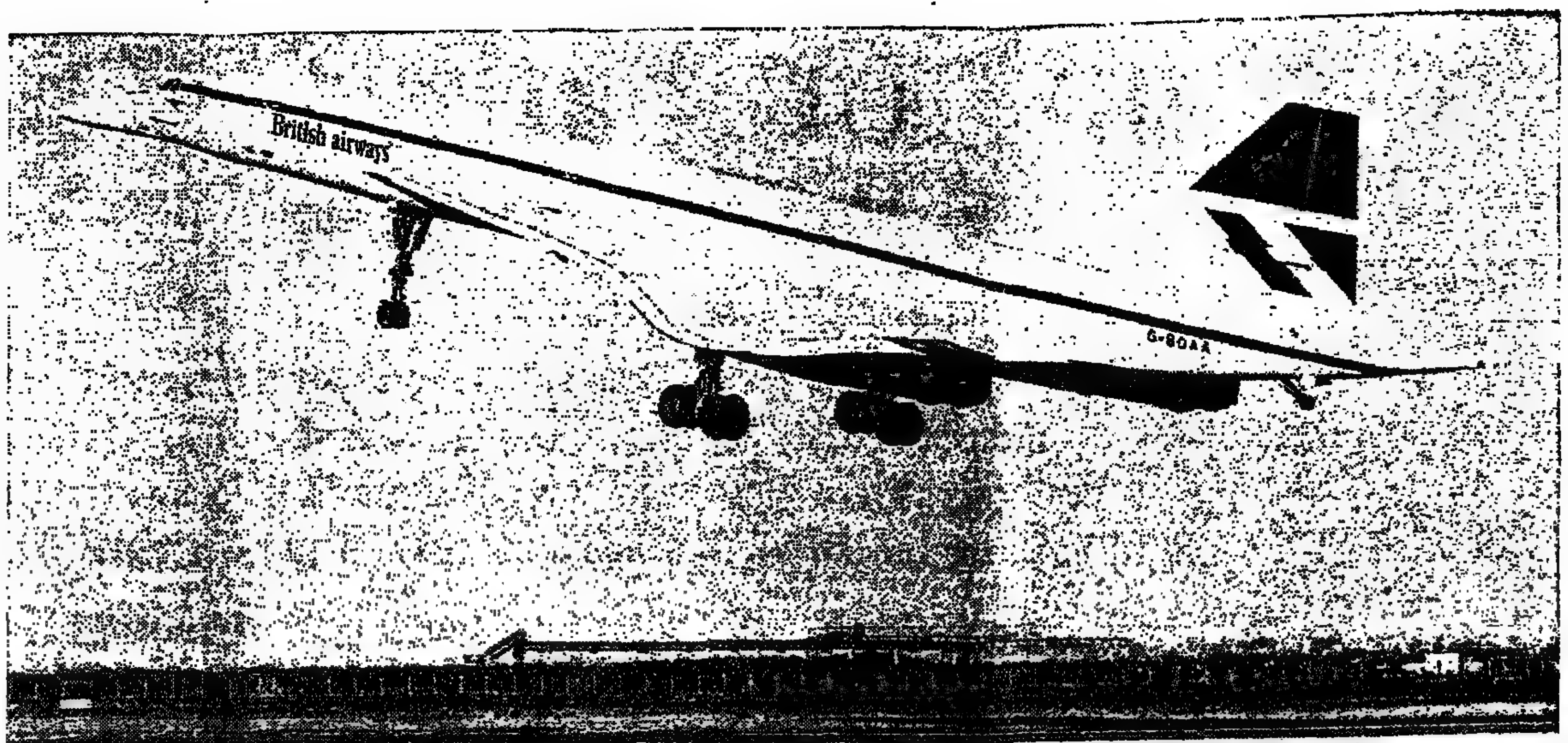
Collectively, all these companies comprise the UK aerospace industry, which with a total of close on 190,000 employees, and a turnover well in excess of £2bn a year, is the second biggest aerospace industry in the Western world, after that of the U.S. The industry's collective exports continue to run at record levels, and for the first six months of this year they amounted to more than £500m, indicating that for the year as a whole they are likely once again to exceed the £1bn figure.

So far as British Aerospace itself is concerned, the group as a whole achieved in its first year of operation up to December 31, 1977 (which included results for individual companies in the three months immediately prior to Vesting Day in April), total sales of £860m, of which 62 per cent, or £536m were in exports. The trading profit of the group amounted to £65m, with a profit after tax of £29m, representing a return of 8 per cent on sales. Orders in hand at the end of the year amounted to £2,283m.

These are the bald facts behind the initial performance of the nationalised aerospace industry. While some of the credit for it can go to the newly-established Board of British Aerospace, under the chairmanship of Lord Beswick, much of the foundation for the financial success of 1977 was, of course, laid a long time before, while the constitutents of the new group were still independent. It is now the main task of Lord Beswick and his team to build on the foundations laid by their predecessor Boards in the original companies.

Much of the first year's activity of the new group has been dominated by reorganisation, without interrupting the flow of work in civil and military aircraft, guided weapons and space research upon which the group depends for its future. The day to day operational responsibility inside British Aerospace is now delegated to two groups—the Aircraft Group, responsible for all civil and military aircraft work, and the Dynamics Group, responsible for space research and guided weapons.

Below these two groups, responsibility is further delegated to divisions formed partly on the basis of geographical convenience and partly on functional or product factors. The aim of Lord Beswick and his team is to encourage the maximum of local initiative whilst securing the benefits of corporate strength and overall utilisation of resources. The group as a whole has 23 factories throughout the UK, with 11 airfields. Since the Second World War, it has built no less than 224,000 civil and military aircraft of all kinds, from Concorde supersonic airliners down to small Bulldog light basic trainers.



Although production of Concorde is now nearing completion, the aircraft will remain in service for many years until a "second generation" supersonic airliner emerges, perhaps in the 1990s.

Military aircraft currently in production include the Harrier vertical take-off fighter; the Tornado multi-role combat aircraft; the Jaguar jet strike-trainer and the Hawk basic trainer and light combat aircraft. Civil types in production include the last of the Concordes; wings for the European A-300 Airbus; and full production of the HS-748 feeder-liner; the HS-125 executive jet and the One-Eleven twin-engined jet airliner. The last Trident has left the production line at Hatfield, but its place is about to be taken by the 146 feeder-liner, discussed later.

The contract for work on the wings for the European A-300 Airbus is a particularly significant development for British Aerospace. With firm orders for over 108 aircraft, and options on more than 50 aircraft, the Airbus is selling exceptionally well. British Aerospace not only provides wing-sets for the B-2 and B-4 versions of the aircraft, but also has a design consultancy and support role. The Hatfield-Chester Division has so far delivered more than 80 sets of wings to Europe for completion in Bremen and final assembly in Toulouse. In addition, British Aerospace has provided design services and marketing, product and flight-test support, and the whole venture has been worth over £200m. Five British Aerospace factories are involved (Hatfield, Chester, Brough, Manchester and Hamble) and around 2,000 design, administrative and production personnel are employed in this increasingly successful and profitable programme.

Among guided missiles in production or development are the Rapier anti-aircraft missile; the Seawolf ship-borne point defence guided missile; the Sky-Flash air-to-air weapon; the Swingfire anti-tank missile; the Martel air-to-surface tactical strike missile; the SRAAM short-range close-combat air-to-air weapon; the Sea Skua lightweight anti-ship missile system, and the Land and Sea-Dart area defence system against high and low flying aircraft.

Satellites

Space activities include a wide range of satellites for both scientific research and commercial applications, including the Marots martime communications satellite for the European Space Agency (as part of the European MESH consortium); the Intelsat IVA series of satellites (under contract to Hughes Aircraft of the U.S.); and (as prime contractor) the recent European Space Agency's GEOS-2 scientific satellite.

A major contribution to the group's business is now also being made by the sale of expertise to foreign countries under what are called "defence support contracts," whereby both specialist advice and hardware is made available in "package deals" worth in some cases several hundreds of millions of pounds. Examples of this include the deals with Saudi Arabia, whereby the original British Aircraft Corporation took responsibility for the pilot and ground crew training of the Royal Saudi Air Force, for the maintenance and support of aircraft, for developing and operating an efficient supply system, and for the construction and maintenance of buildings and plant. A big follow-on contract was signed some months ago with British Aerospace, and now there are some 2,000 British Aerospace personnel in Saudi Arabia, in addition to another 2,000 comprising local labour and sub-contractors' staff. Furthermore, as a result of contracts awarded in 1974 by the Omani Government to BAC for Jaguar strike aircraft, One-Eleven jet transports and Rapier air-defence missiles, further contracts have been signed for British Aerospace to manage a comprehensive modern air defence system for Oman.

While much interest is currently being shown in the civil airliner manufacturing side of the British Aerospace group's activities, and especially in the question of a share in developing a new short-to-medium range civil aircraft for the big markets of the future, it is a fact that the bulk of the group's activities lie currently in the military, guided weapons and space fields, accounting for up to about 70 to 75 per cent of total current turnover. On the civil side, much of the slack that was being generated by the run-down of some major programmes of the past, such as Concordes and Tridents, can now be expected to be taken up by the 146 feeder-liner programme, and the continuation of the One-Eleven production through the recently-signed Romanian agreement.

The latter provides for the licensed production of 80-plus One-Eleven twin-engined airliners over the next 15 years. The programme, worth many millions of pounds in exports to Britain, will move in phases towards the eventual complete assembly of One-Elevens under licence in Romania in parallel with production in the Bristol, Weybridge and Hurn factories of British Aerospace. Over £100m of the agreement is also concerned with the joint manufacture of 225 Rolls-Royce Spey engines which power the One-Eleven. Eventually, about half the Spey parts will be produced in Romania. The programme will begin with three One-Elevens ordered from British Aerospace, and then continue on a reducing scale of UK-supplied parts in seven stages for the first 22 aircraft. The industrial transfer will be completed by 1985, and thereafter manufacture of complete aircraft will continue in Romania at the rate of six aircraft a year into the 1990s. About half the total output will be for Romanian domestic use and the remainder for external markets. Eventually, customers will be able to buy identical One-Elevens from both Britain or Romania.

Versions

The other major development with long-term importance for British Aerospace was the Government approval this summer for the full-scale development and production of the original Hawker Siddeley HS-146 four-engined short-haul feeder-liner, now known as the British Aerospace 146. This £250m programme envisages two civil versions of the aircraft being built (with some foreign participation in manufacture), the Series One model seating 70 to 90 passengers and the Series Two which will be a little larger, seating 80 to 109 passengers. A military version of the aircraft is also mooted. The engines will be provided by Avco Lycoming of the U.S. The aim by British Aerospace is to fly the prototype in 1980 and to have aircraft available for delivery from 1981-82. The group is hopeful that it can win orders eventually for up to 350 of these aircraft, out of an estimated total market of about 1,200 aircraft in the broad "feeder-liner" category. It is likely to be an arena of fierce competition, however, for many second-hand existing twin-jet airliners of the One-Eleven, Boeing 737 and McDonnell Douglas DC-9 category will find their way into this market as their original owners, equipping with bigger aircraft, pass their older jets on down the line to smaller operators in the Third World. Nevertheless, British Aerospace remains convinced that it can find a market and its salesmen are on the road already, with the hope of some contracts before the end of this year.

Michael Donne

Growth

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calculating the future strategy for British Aerospace and Rolls-Royce is the volume of investment required.

The programmes currently envisaged collectively are likely to account for investment of more than £1bn—the 146 alone will account for £250m, any share in the Airbus A-310 for more than £200m, with over another £200m for a share of any smaller short-to-medium range aircraft in the JET/ATMR/757 category, while the Rolls-Royce RB-211-535 engine will cost over £250m, and with at least a further £200m needed for the RB-432 "Spey Replacement" for One-Eleven developments and the RB-401 engine for smaller aircraft. Much of this investment will be generated internally by the industry itself, but nonetheless the Government faces a major aerospace spending programme.

With investment of this magnitude at stake, it is imperative that the UK industry is steered along the most potentially profitable lines. Over recent months, however, there have been strong indications that the three major elements in UK aviation—British Aerospace, Rolls-Royce and British Airways—have been speaking with disparate voices, with British Aerospace anxious to link with Europe, and Rolls-Royce and British Airways anxious to link with Boeing on the 757 venture. This has undoubtedly delayed decisions on future policy.

Harmonise

What is clear is that there is a need for some machinery that could try to harmonise these disparate views well in advance of Government international negotiations on policy, so that a coherent programme can be developed without delay. A Central Aerospace Policy Co-ordinating Committee, for example, might well be established that would in no way interfere with the day-to-day running of British Airways, Rolls-Royce, British Aerospace and the rest of the industry.

But it could harmonise their views, together with those of the Government through the Departments of Industry, Trade, Treasury and Foreign Office, and those of other elements in UK aviation, including the Civil Aviation Authority and even the Central Policy Review Staff (the "think tank") itself. In this way long-term coherent policy objectives could be formulated, often well in advance of emerging market trends, and an overall UK aerospace policy laid down — much in the same way that the former Transport Aircraft Requirements Committee of the late 1940s and 1950s help to lay the groundwork for the Viscount, Comet, and other early post-war civil aircraft.

A similar kind of long-term strategic body has been set up this summer to consider future airports policy in this country, and there is every reason why a similar organisation, small and tightly knit, could be employed to solve problems in aerospace as they arise, obviating much of the indecision and divergencies of view that have characterised thet UK aerospace scene not only this summer but also for years past.

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Engine makers gear up for battle

WITH THE long-awaited re-equipment tide now on the verge of flowing through the world's airline and aerospace industries, the major aero-engine manufacturers are gearing up for what may become the biggest commercial struggle they have seen for many years, to win the power-plant contracts for the new generation of jets now emerging from the airframe builders' project offices.

For with only very few exceptions, all the new-generation airframes being proposed on both sides of the Atlantic are being offered with a choice of engines. This is deliberate policy on the part of the airframe manufacturers, as a means of widening their eventual sales. It represents a significant change from the days when an airframe maker chose one aero-engine partner, and stayed with him throughout the life of his aircraft programme. Today, however, the airframe maker starts by studying the available engine market, and builds his airframe so as to suit as wide as possible a variety of power-plants capable of achieving the range-payload targets he has set himself.

Brands

This is already resulting in some major types flying the world routes with different brands of engine—the Boeing 747 Jumbo jet, for example, uses all three of the "big thrust" engines, the Rolls-Royce RB-211, the General Electric CF6 Series and the Pratt and Whitney JT-9D. It is also resulting in some bitterly contested battles for engine contracts. The Rolls-Royce RB-211, for example, although the original "launch engine" for the Lockheed TriStar, had to fight hard to win the contract this summer from Pan American for the engines in that airline's new fleet of 12 long-range Dash 500 TriStars, for Pan Am closely studied all three possible engine-airframe combinations before deciding that the RB-211's performance justified it in departing from its long-standing commitment to engines from Pratt and Whitney.

In that particular competition, the financing terms offered by Rolls-Royce played a significant part in winning the contract for the RB-211, and it is becoming a new fact of life in the commercial aircraft and aero-engine market worldwide that where competing projects are balanced on a knife-edge so far as performance is concerned, the order may well be won by the project whose maker can offer the best long-term financial arrangements. The UK and European manufacturers have quickly latched on to this situation, and it is likely that finance will continue to play as much a part as performance in settling some of the big contests that lie ahead.

There has been some criticism in U.S. political circles recently of the way in which airframe and engine deals won by European companies in the U.S. market have been supported by government or other financial guarantees. The implication is that some of these deals have been won unfairly by the Europeans. This, of course, is nonsense. The U.S. aerospace industry itself has for long recognised that European and UK airframe and engine products are of first-class quality, and that where those programmes have been supported by Government development money, it is only natural that Governments should help to underwrite sales. Moreover, with the U.S. industry itself already possessing more than 80 per cent of the Western world's air transport markets, it cannot complain if some European counter-attack is launched to win back some of the ground lost over the past 25 years or more. Nevertheless, both the engine and airframe makers on this side of the Atlantic are well aware that the political groundswell caused by the European victories in the U.S. market (the Airbus sale to [illegible] Air Lines, for example, and the Rolls-powered TriStars for Pan Am) may result in moves to block such sales in future on the grounds of "unfair competition."

Earlier this summer, for example, a U.S. Treasury official involved in international trade policies, told a House of Representatives Ways and Means Sub-Committee that the U.S. Government was concerned over some of the financing arrangements on recent European deals for engines and airframes in the U.S., which he described as having "gone beyond an international understanding on export credit terms for commercial aircraft." He said that at a meeting this October, an export credits panel of the Organisation for Economic Co-operation and Development (OECD) will provide a forum to begin negotiations to "strengthen" the international export credit understandings, including those dealing with airframe and engine exports from Europe to the U.S. He suggested that if other countries did not agree on export credit restraints, the U.S. might be forced to retaliate. This implied threat of retaliation, however, is not deterring the European aircraft and engine manufacturers from continuing their campaigns to win sales in the U.S. market.

Another factor in the current engine scene is that because of the high cost of developing entirely new jet engines, the trend is more and more towards the evolution of "families" of engines. All three of the "giant" manufacturers have taken their basic big-thrust engines, originally developed for the first-generation wide-bodied jets, and are developing them both upwards in power into the 50,000-60,000 lbs mark, and downwards towards the 30,000 lbs thrust mark, so as to be able to span the widest possible spectrum of airframes and range-payload performances that the manufacturers and the airline customers may desire.

For the new generation of short-to-medium range jets now on offer or proposed, the choice of engine is being left absolutely to the customer airline. Probably the only significant exception to this broad rule of "if you want it, you can have it," is in the proposed Joint European Transport (JET) programme, where the various versions of the twin-jet airliner planned in this series are being specified at least initially with the new generation Franco-U.S. (Snecma-General Electric) CFM-56 engine.

One immediate result of this wide availability of choice is that the airlines which already have a specific manufacturers' engines in their existing fleets of first-generation wide-bodied jets, will also be able to specify derivatives of those same power-plants for any of the new-generation airframes now coming forward. This applies to the 200-seat A-310 on offer from Airbus Industrie as well as the bigger B-2 and B-4 versions of the Airbus; to the Boeing 767 twin-jet airliner, now formally launched with the big order for 30 aircraft from United Air Lines; to the Boeing 777 tri-jet; and to most of the other designs on offer in the smaller 130-180 seater category, such as the proposed Boeing 757 twin-jet and the McDonnell Douglas Advanced Technology Medium Range (ATMR) programme.

Fierce

This competition between the three major aero-engine manufacturers is likely to become very fierce indeed, and some very substantial sums have been, and still are being spent by the engine builders to perfect their entries for the battles now shaping up in world markets.

In the UK, Rolls-Royce is already strongly placed with the RB-211, which in its Dash 22 and Dash 524 versions has already won a considerable reputation in both the Lockheed TriStar and, with the Dash 524, also in the Boeing 747. Now, a new version of the engine, the Dash 535, is under development, aimed at a thrust level between 30,000 and 36,000 lbs thrust, thereby widening the sales opportunities of the RB-211.

This version of the RB-211 has been designed to meet the need for a fuel-efficient, quiet and economic engine for the new generation of medium-sized airliners proposed for service in the mid-1980s, and in particular the proposed Boeing 757 twin-engined and 777 three-engined jets. As a "derivative" engine, the Dash 535 retains the proven advantage of the RB-211, but has lower launch and introductory costs than a totally new design. It has a low fuel consumption, and a thrust-to-weight ratio up to 16 per cent better than for the earlier Dash 22B version of the engine.

A large amount of development work has already been done on it at Rolls-Royce's Derby factory and Rolls-Royce is working closely with Boeing of the U.S. to offer the engine as a prospective "launch engine" in the 757 twin-engined aircraft which Boeing is planning as part of its new family of jets for the rest of this century and beyond. The eventual development cost of the Dash 535 is expected to be in the region of £250m, but Rolls-Royce argues that this investment will be more than adequately recouped from the big market that could emerge worldwide for the 757 aircraft in the years ahead, with sales of the engine perhaps reaching as much as £1bn.

But the competition is undoubtedly formidable. Pratt and Whitney, for example, is offering the JT-10D—in itself a "family" of engines, spanning a take-off thrust range of between 25,000 and 35,000 lbs—which means that they will be capable of competing with the Franco-U.S. CFM-56 at the lower end of the scale, and both the RB-211-535 and General Electric CF6 Series at the upper end. Initially, development work has begun on a power-plant sized at 32,000 lbs take-off thrust, designated JT-10D-132, with certification planned for December, 1981. This engine is specifically aimed also at the Boeing 757 and 777 aircraft. Pratt and Whitney is undertaking the bulk of the work on this new family of engines, or about 83 per cent, but it is an international collaborative venture, with Motoren-und-Turbinen Union of West Germany having about 13 per cent of the work and Fiat of Italy about 4 per cent.

The third contender in this new category of power-plants is the General Electric CF6-32, a derivative of the CF6 series of engines already widely used in DC-10 jets and European Airbuses. Designed for a take-off thrust of about 36,450 lbs, the Dash 32 engine is also being aimed at the new generation of short-to-medium range jets.

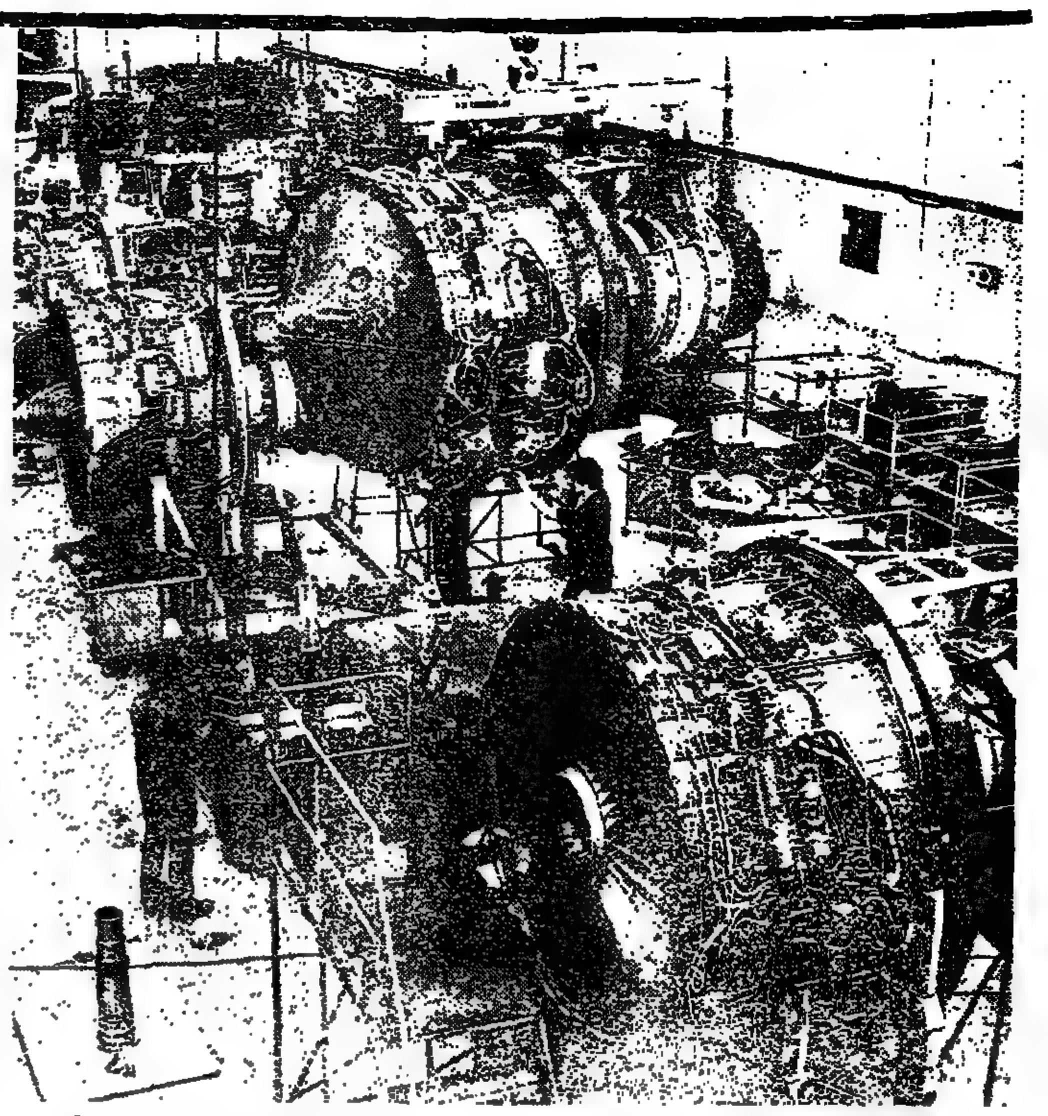
All of these UK and U.S. power-plants are designed to be ultra-quiet, so as to meet the increasingly stringent noise requirements that will become mandatory at many world airports in the mid-1980s. They are also designed for improved fuel efficiency in a period when fuel costs are expected to continue to rise and when energy-saving programmes will become major social and political issues in many countries.

Plans

But apart from concentrating much of its existing and prospective resources on the development of new versions of the RB-211, Rolls-Royce has plans for other new engines to meet a variety of new civil airframe opportunities that are likely to arise in the near future. The company has for long been aware that it has a gap emerging in its spectrum of engine capabilities, between the existing ageing Spey and the lower end of the RB-211, the Dash 535 engine. To fill at least a part of this gap, it has been working for some time on two engines, the RB-401 and RB-432. The RB-432 is a new engine in the 16,000 lbs to 18,000 lbs thrust class, that could effectively be a Spey replacement engine for the future, suitable for a new twin-engined aircraft of the 100-120 passenger size, as well as for re-engining current aircraft in this class.

Below the RB-432 in thrust size lies the new RB-401, a programme to develop an engine starting at about 5,100 lbs thrust that would be suitable not only for business jets but also for a wide range of military projects, such as ground attack or light trainer aircraft, or even remotely-piloted vehicles. The engine is designed to have 40 per cent better fuel consumption than engines which power the first-generation of business jets. Both the RB-401 and RB-432 engines have been designed to meet the anticipated noise and pollution legislation of the 1980s.

M.D.



Production at Rolls-Royce Derby of the 48,000-lb thrust RB-211-524 engines selected by Pan American World Airways to power the Lockheed TriStar airliners it has on order.

Military aircraft sales

THE MARKET for military aircraft throughout the world continues to be strong, with every sign that demand may increase rather than slacken in the *immediate* future. Estimates of likely sales are difficult to obtain, but with growing emphasis on conventional weapons most reliable forecasts indicate that between now and 1990, several thousand new military aircraft of all types are likely to be added to the NATO inventories alone, including, for example, more than 800 Panavia Tornado multi-role combat aircraft.

U.S. military aircraft production alone in the current financial year is expected to amount to close on 1,000 aircraft, although this includes such widely diverse types as the McDonnell Douglas F-15 Eagle and General Dynamics F-16 air-superiority fighters, the Fairchild Republic A-10 close air support aircraft, the Boeing E-3A Airborne Warning and Control Systems and various helicopters such as the new Utility Tactical Transport UH-60A (of which over 1,000 are eventually expected to be built).

One of the main aims in NATO in maintaining such a high production flow of military aircraft for the immediate future is to try to redress the imbalance that has emerged vis-a-vis the Warsaw Pact, for in the central region of Europe alone the Warsaw Pact's fixed-wing tactical aircraft fleet now outnumbers that of NATO by 2.4 to one.

At the same time, despite efforts by the U.S. and other countries to de-escalate the so-called "arms race" throughout the world, and especially in the field of strategic nuclear weapons, many countries continue to spend substantial sums on weapons of all kinds, with conventional tactical combat aircraft taking high priority. Some of the most lucrative contracts for Western aerospace manufacturers in recent years have come from the Middle East, where various countries, including Iran, Israel, and various Arab nations such as Saudi Arabia, have been steadily building up *their air power*, and are likely to continue to do so for some time to come.

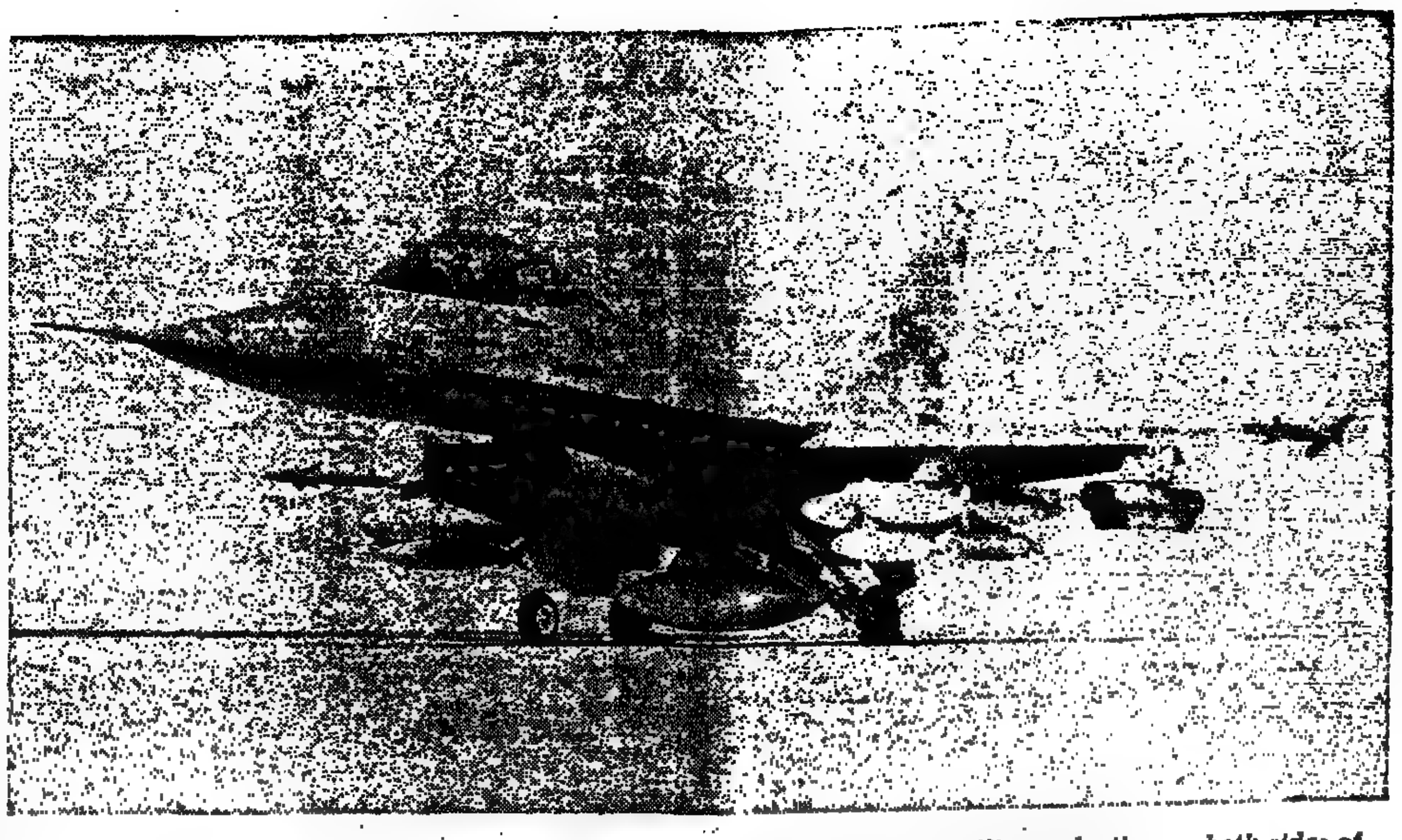
Indeed, some of the countries of the Middle East have been especially vigorous in developing not only their air forces but also their own indigenous aerospace industries in recent years. Israel, for example, now has one of the world's most active aerospace manufacturing groups, Israel Aircraft Industries, which although perhaps small by the standards of the UK and U.S. aerospace industries is nonetheless formidable in its technical achievements, having already built the Kfir supersonic combat fighter in substantial numbers.

Arab

Among the Arab nations, plans to develop a military aircraft production capability continue through the Arab Organisation for Industrialisation (AOI), and in recent months some substantial contracts have been signed with Western European countries to help develop aircraft manufacture in Egypt on behalf of a consortium of Arab nations including Saudi Arabia, Qatar and the United Arab Emirates. Companies in the UK which have benefited from this include Westland Helicopters, which is selling its Lynx multi-purpose helicopter initially to Egypt with the eventual aim of the aircraft being assembled and then manufactured there, along with the Rolls-Royce Gem engine which powers that helicopter. French aerospace interests are also negotiating weapons deals with the AOI.

Also in the Middle East, Iran has been steadily building up its air force, with substantial purchases of U.S. combat aircraft and helicopters, and is now also establishing an aircraft manufacturing capability, for which it is seeking Western technological support.

It seems likely that, so far as the West is concerned, the major aircraft already in development or production today for the immediate future will be the combat types that will dominate the NATO armouries through the 1980s and beyond. These include such types as the UK-West German-Italian Panavia Tornado multi-role combat aircraft, the new French Dassault Mirage 2000 which is now flying and the Super Mirage Delta (the prototype of which is due to fly this autumn); the Grumman F-14 Tomcat; the McDonnell Douglas F-15 Eagle; the General Dynamics F-16, the combined McDonnell Douglas / Northrop F-18 Hornet, and such other aircraft as the McDonnell Douglas Phantom (of which 5,000 have now been delivered), and the famous long-running line of French Dassault Mirage III fighters and Mirage 5s.



The U.S. General Dynamics F-16 air-superiority combat aircraft is now in quantity production on both sides of the Atlantic for the U.S. Air Force, and for the air forces of Belgium, Denmark, Holland and Norway, under a joint international manufacturing programme.

But it can be expected that, because of the increasingly high cost of development and production of entirely new military aircraft, most of the new developments for the 1980s and beyond—at least so far as airframes are concerned—are likely to be derivatives of existing or proposed new types from the list above. This in no way implies that any such derivatives will incorporate only minor changes or improvements. Many so-called derivatives in the past have been virtually new aircraft, embodying substantial improvements in performance over their predecessors. But where an efficient and proven combat capability has already been established with a given design, increasingly the tendency is likely to be to develop from it and adapt it, rather than throw it away entirely and start again from scratch.

Although very little is revealed about the detailed philosophy of Soviet combat aircraft development, the tendency there appears to be also for this evolutionary rather than revolutionary concept to be adopted.

One contributory factor to this emphasis on derivatives stems from the belief, expressed by several senior Air Force analysts on both sides of the Atlantic in recent years, that combat aircraft *performance* may now be on the verge of a "plateau," where refinements of existing capabilities, in terms of more devastating weapons with improved delivery systems, are likely to be of considerably more importance than improvements in absolute speed. The aim from now on seems more likely to be to try to find the most cost-effective balance between what is undoubtedly aerodynamically achievable in terms of faster speeds and greater combat altitudes, with what is actually desirable in military terms.

Factors which have to be borne in mind in calculating this extremely complex equation *include the continued rapid* build-up of Soviet and Warsaw Pact conventional forces, with a heavy emphasis on battlefield support and an increasing superiority in terms of numbers of tactical combat aircraft, together with what new types they are likely to develop in the years ahead. There have been various reports emanating from the Soviet Union, mostly unsubstantiated, of radical new ideas for combat aircraft, but so far the "Mig-25" Foxbat replacement has not emerged — although an advanced version called Foxbat E is known to exist, and advanced swinging-wings strike aircraft like the supersonic Sukhoi Su-19 Fencer *are increasingly seen* as the main air threat in the NATO Central Region.

Cautiously

So far as NATO is concerned, future aircraft developments must also take account of standardisation, both as a means of saving costs and of improving overall military efficiency. The RAF itself makes no secret of the fact that it believes that in today's more stringent economic climate it must take forward jumps cautiously — that the well-tried techniques may still be capable of adaptation for new tasks, although in accepting this philosophy this is not to suggest that the radically new is not likely to be acceptable or even essential to meet the emergence of new or swiftly changing requirements.

Thus, it seems likely that many of the types listed above are likely to be seen in service, in one form or another, for much of the rest of this century. In any event, only in the late 1980s or early 1990s, in the light of the military, technological and economic circumstances prevailing at the time, will any radically new designs begin to emerge for service in the next century. Thus, for the immediate future, most of the basic demand for improvements in combat aircraft technology will be felt in the avionics (airborne electronics) and weapons fields, rather than in the airframe field, although it does seem likely that the engine manufacturers will find themselves under increasing pressure to improve things like fuel efficiency. But the heaviest demand is likely to be for such things as improved radar and navigation performance, immensely improved target acquisition, identification and tracking procedures, for improved guidance systems for weapons; and for better all-weather and day-and-night operational performance. It is in these fields that innovations will be sought in the immediate future and where much of the available development cash will be spent.

Beyond

For the long-term future, however, in view of the time it takes to develop new types, the U.S. is already embarking on a major research programme to determine the possible performance capabilities of military combat aircraft for the 1990s and beyond. Called HiMAT, for Highly Manoeuvrable Aircraft Technology, this programme is being run by the National Aeronautics and Space Administration in conjunction with the U.S. Air Force. HiMAT has two objectives—to accelerate aeronautical design advances from the research laboratories into flight testing, and to expand design techniques that will permit quantum jumps in performance from one generation to the next. Rockwell International of the U.S. has designed and built a remotely-piloted research vehicle about half the size of a modern combat aircraft, that will be flight-tested later this year over the Mojave Desert in California, being launched from a B-52 bomber at 45,000 ft. Engineering studies indicate that HiMAT will have twice the turning capacity of the most manoeuvrable fighter today and it will exploit the properties of advanced composite materials. It is stressed that this is a research programme, and that the U.S. is not about to embark upon fighter design embodying the very advanced techniques that HiMAT itself will test. It may be some years before designers can utilise even some of the simplest of the new ideas that HiMAT will test, and it is likely to be at least a decade before they begin to take shape in combat aircraft on the drawing boards and in the project offices. HiMAT, however, does represent an attempt by the U.S. to look well ahead of existing concepts, and seek to find solutions to problems which are only now beginning to surface in high-speed combat aircraft technology and which are themselves imperfectly understood.

The emphasis on trying to get greater value for money can be seen in the few new types that are being prepared for service in the late 1980s and beyond, to meet specific requirements which can already be seen to be emerging. In the U.S., both the Defence Department and the Air Force are studying designs for a new, low-cost, simple ground-support fighter for the late 1980s called "Bushwhacker" or "Bushfighter," that could be used as a tank-buster in the Central European region of NATO. Preliminary studies have been conducted by General Dynamics, Grumman, Northrop, Vought and Rockwell, and the aim is to produce an aircraft that would be cheap—costing possibly no more than $2m per unit—and able to be produced in large numbers very quickly. There would be a minimum of sophisticated new equipment aboard it.

The U.S. Navy has also begun a competition to find a new cheap trainer aircraft, of which it will need 1,000 or so in the years ahead.

In the UK work is being pressed ahead on the long-discussed combined replacement for the British Harrier vertical take-off aircraft and the Anglo-French Jaguar jet strike-trainer, which is likely to be the last major UK military aircraft programme in this decade. Currently, the UK has done most of the work, in the form of industrial responses to what is called Air Staff Target 403, embodying many conceptual studies of what such an aircraft ought to include in its design and performance. Many factors have shaped the Air Staff's ideas. First, such an aircraft would be needed to support the Tornado, and it would be required to counter the large numbers of high-performance ground attack aircraft that the Warsaw Pact is expected to be able to deploy over the battlefield in the late 1980s and beyond.

Secondly, it will need to be a flexible aircraft in its performance, capable of undertaking a wide variety of roles, including both air-to-air combat and ground attack, with a secondary surveillance role. Thirdly, it will need to be capable not only of using hard runways but also rough airstrips in the forward battle zone, rather like the Harrier today. This implies either vertical take-off and landing capability, or at least very-short take-off and landing. Finally, although it must be able to carry a wide variety of armament, it must be simple and rugged, for it will have to operate in a very unsophisticated environment.

Considerable emphasis is being placed on this venture in the RAF, for it will be crucial to that service's overall capability in the 1980s. It will, in effect, supplement the Tornado, and the two together will make up most of the RAF's front-line combat forces. Accordingly, considerable efforts are being made to get the specification right, and an original batch of more than a score of different solutions to the problem have already been progressively whittled down to about three.

Studies

This small number of possible solutions is now being increasingly discussed with the air forces and aerospace industries of the NATO countries, to discover if there is any comparable requirement emerging with them, and if so whether an international collaborative effort on the AST-403 can be evolved. The Defence Ministers of the UK, France and West Germany have already broadly agreed that such studies should continue, but there is so far little indication of major West German and French interest in the venture, and it seems so far that the UK has the most pressing requirement for such an aircraft.

International collaboration on such a venture, however, seems inevitable. In view of inflation between now the late 1980s, when AST-403 is likely to *arrive*, the overall design, development and production cost of the programme is likely to be several billions of pounds —probably matching or even exceeding the cost of the Tornado multi-role combat aircraft programme itself. It is likely that the UK will require upwards of 400 aircraft alone to meet its Harrier and Jaguar replacement needs, so the production programme is also likely to be a big one. For that reason, it seems unlikely that the UK could ever contemplate undertaking the venture alone, and international collaboration will therefore be essential. If it does not prove possible to achieve such collaboration with Continental countries, because of differing time-scales of military aircraft replacement needs, and pressures on budgets in other directions, it is possible that the UK might seek collaboration in the U.S.

M.D.

The next generation of airliners

ALL THE signs now are that the long-expected re-equipment tide has begun to flow through the world's airlines, and over the next few months there is likely to be a steady inflow of new orders, some of them substantial, as operators move quickly to secure their places in the delivery queues for a new generation of short-to-medium range civil airliners.

It has been estimated that between now and the mid-1980s, sums approaching \$74bn or £40bn, will be spent by airlines throughout the world on upwards of 3,000 new airliners of all kinds, both to meet the continued rapid growth of world air passenger traffic (it is now expanding at an average annual rate of about 8.7 per cent a year) and to replace rapidly ageing fleets that will become increasingly unacceptable in the mid 1980s as fuel costs rise and increasingly stringent noise regulations are introduced at many of the world's major airports.

An analysis of this expected expenditure shows that more than half of it, or \$47bn (£26bn) is expected to be spent on new aircraft in the short-to-medium range category, where the vast majority of the world's air passengers already travel, and where most of the growth in the future is likely to occur. The rest will be spent largely in the long-haul field (about \$24bn, or over £13bn), with a much smaller sum of about \$3bn going on cargo jets to meet the growth in this sector of the commercial airline business.

It is thus in this short-to-medium range section of the market that most of the interest has so far been concentrated, with manufacturers on both sides of the Atlantic busy over recent years preparing designs with which to woo the airlines. The latter for a long time appeared to be extremely reluctant to commit themselves, however, for a variety of reasons. Among these has been the slow recovery of the world's economic situation from the recession that followed the oil crisis of 1973, together with lack of adequate cash reserves among many carriers.

A more significant factor has also been that many of the existing types of airliner, such as the Boeing 737 and McDonnell Douglas DC-9 short-haul jets, and the Boeing 727 medium-haul airliner, have continued to meet more than adequately the needs of most airlines, and have continued to sell so well that Boeing has been obliged in recent months to step up the production rate of the 737 and 727, while McDonnell Douglas has found it worthwhile to launch a new version of its ubiquitous DC-9, the Series 80.

But while all these aircraft can be expected to continue to sell well over the next few years, for the longer-term, a "new-generation" of jets will be needed to carry the world's air traffic into the 1990s and beyond, to meet the needs of airlines who will need to be able to carry larger payloads as well as meet the governmental and environmental demands for quieter and more fuel-efficient aircraft.

The first of this "new generation" of short-to-medium haul jets has been available, in fact, for some time, in the shape of the 269-seater European A-300 Airbus, which has in the past year or so begun to sell extremely well, winning major orders in its B-2 and B-4 versions worldwide.

Launched

But the real battle is expected now to come in the smaller, 200-seat category of aircraft, where Airbus Industrie, the European consortium that builds the A-300, this past summer formally launched its new A-310 version of the Airbus, with orders and options from such major airlines as Lufthansa, Air France and Swissair, and with several other European airlines also considering contracts.

The A-310 launch was quickly followed by the long-awaited announcement of the formal launching of the Boeing 767, also a twin-engined airliner in the 200-seater category, and in effect a direct competitor for the 310. The Boeing 767, costing \$25m per aircraft, won an order for 30 aircraft worth over \$1.2bn from United Air Lines of the U.S. (the biggest airline in the Western world)—a contract for which the Airbus Industrie group had also fought hard with the 310.

Recently, too, Lockheed of California staked a claim for a share of this 200-seater market by confirming that it was now making firm offers to airlines of its new version of the TriStar, the Dash 400, based on all three of the big-thrust engines—the Rolls-Royce RB-211-22B, the Pratt and Whitney JT-9D and the General Electric CF-6 series, all of around 42,000 lbs thrust. Lockheed said that the Dash 400 TriStar would be able to carry 280 passengers over ranges of 3,200 to 5,050 nautical miles. Lockheed claimed that the Dash 400 would contain "every technological advance that will be available on any transport in the next ten years," including automatic thrust control at take-off, and a new fuel management system.

The other major U.S. manufacturer, McDonnell Douglas, also had originally a design for a 200-seater, the DC-X-200, but has shelved its plan to compete in this section of the future aircraft market.

The battle of the 200-seaters is now joined, with the B-10 directly slogging it out in world markets with the Boeing 767 and the Dash 400.

Below this 200-seater category of jets, however, yet another new family of aircraft is in the gestation stage—those seating variously between about 130 and 180 seats, also for short-to-medium ranges, but serving as complementary aircraft to the bigger 200-seater types. The market here is estimated at anything upwards of 1,000 aircraft by 1990. These programmes include the proposed Joint European Transport (JET) venture, which is also under the aegis of Airbus Industrie, in which there would be two types of aircraft: JET-1, seating 136 passengers and JET-2 seating 163. Other contenders in this field include the proposed U.S. McDonnell Douglas advanced Technology Medium Range (ATMR) jet transport, and the Boeing 757. All of these designs will be twin-engined, with a variety of power-plants.

The JET family, for example, is being designed round the new Franco - U.S. (Snecma - General Electric) CFM-56 engine, while the ATMR and Boeing 757 specify any one of the three "new generation" cropped-fan engines derived from the present generation of "big thrust" engines—the 535 derived from the Rolls-Royce RB-211, the General Electric CF6-32 developed from the CF6 series, and the Pratt and Whitney JT-10D (a new engine).

Spread

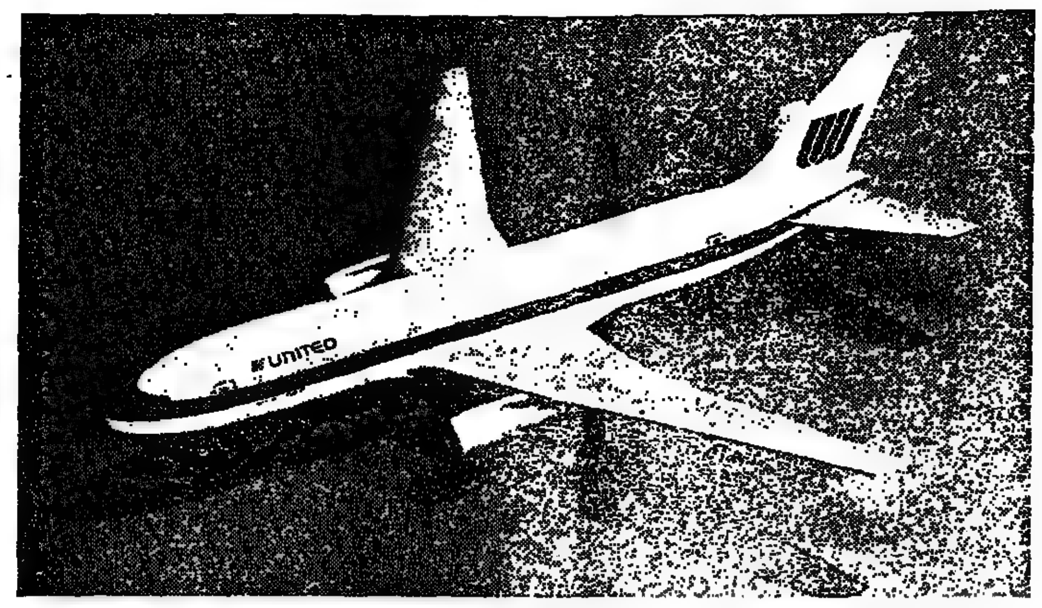
The problem with most of these new airliners, however, is that their development costs will be so substantial that the manufacturers will need international collaboration to help spread the burden of costs and widen the market. Boeing has an agreement with Aeritalia of Italy and has been discussing with the Japanese aerospace industry plans for substantial contributions from both countries to the 767 programme, while in Europe the question of UK participation in the development of the 310 with Airbus Industrie has also been under discussion for most of the past summer.

At the same time, there is the question of collaboration on the smaller family of jets. Boeing has offered the UK a collaborative deal on the 757, involving work on up to about 40 per cent of that aircraft, including work on the wings, landing gear, engine nacelles and part of the rear fuselage. The possibility of UK collaboration with McDonnell Douglas on the development of the ATMR has also been discussed. Even if the UK does eventually rejoin Airbus Industrie, and participate in the development of the 310, the question of what to do about the smaller family of aircraft will still have to be settled—but in a less urgent fashion. The main emphasis at present in world markets appears to be on the bigger 200-seaters, but it seems clear that some decisions on the smaller jet family will also have to be taken by the end of this year. The question is who will move first—Boeing with the 757, McDonnell Douglas with the ATMR, or the Europeans with the JET series? Most observers believe that Boeing is likely to formally launch the 757 by the end of this year, but whoever moves first is likely to spark off another major re-equipment struggle in this smaller jet market.

There are various other areas where the future re-equipment situation seems uncertain. The so-called "feeder-liner" market, for example, in which small 70 to 100-seater airliners are needed to provide "bus stop" air services to many communities round the world which have never had them before, and to feed traffic from small airfields into bigger "hub" airports, is now becoming a lively issue with some manufacturers.

This summer, the UK Government gave British Aerospace permission to go ahead with the £250m Type 146, a four-engined feeder-liner, designed to be built in two versions—the Series 100 carrying 70-90 and the bigger Series 200 carrying 80-109 passengers. A military version of the aircraft is also mooted.

The plan is for the 146 to be pushed ahead rapidly with some foreign participation in manufacture. Some work has been done on it over the past four years while it has been kept "on ice" following cessation of work on the original design in 1974 in the wake of the oil crisis and subsequent industrial recession. Now, it is intended to build it quickly to fly in 1980, and be ready for delivery in 1981-82. If this timescale can be met, the aircraft stands a good chance of winning orders for up to 350 aircraft, representing about one-third of a world market estimated at about 1,200 aircraft of this type over the period up to about 1990. It is an ambitious project, although it is a small aircraft, and one that is likely to test the marketing capabilities of British Aerospace considerably. So far, no airlines have placed orders for this "feeder-liner"—but it is a market that might well become very crowded, being adequately met in many parts of the world by second-hand twin-jets such as Boeing 737s, McDonnell Douglas DC-9s and UK One-Elevens.



The Boeing wide-bodied twin-engined 767 is one of the new generation of short-to-medium haul jet airliners for the mid-1980s and beyond. This 200-passenger aircraft, capable of flying over distances of 2,300 statute miles, has been ordered already by United Air Lines, the biggest airline in the Western world, thus launching Boeing's \$1.5bn development programme for the jet. It is the first new Boeing aircraft design to go into production since the 747 Jumbo jet in 1966.

There are some other new types of aircraft that are already challenging the 146, including the Dash 7 already being built by de Havilland in Canada, and the proposed new development of the Dutch Fokker-VFW F-29 twin jet. Thus, the 146 may not have things all its own way.

At the upper end of the market, in the long-range field, the way seems clear for a continued, very long run of success for the big Boeing 747 Jumbo 400-plus seater long-range jet in its various versions. No-one—in the Western world at least—is ever now likely to be able to invest enough money to develop a challenger to the position Boeing has secured for this giant jet, and it seems that it will continue to win a steady flow of new orders through the rest of this century.

Underneath the 747, however, lies the market for the big medium-to-long range "tri-jets," in the shape of the McDonnell Douglas DC-10 and the Lockheed TriStar. Here again, the investment required to develop successors to either of these aircraft is such that virtually no other Western manufacturer is likely to contemplate it. Both Lockheed and McDonnell Douglas have plans for long-term continued improvements to these tri-jets, with the latter company in particular planning to "stretch" the DC-10 from its present 282-seat configuration to 363 passengers, and it seems likely that these manufacturers will have the "big tri-jet" field to themselves for the rest of this century at least.

But there are some areas of new opportunity that do seem to be emerging. One is for what is called a "long, thin" aeroplane—that is, an airliner seating perhaps no more than 200 or so, much fewer than either the 747, DC-10 or TriStar, but which would have very long range. This type of aircraft would be useful on those very long routes where traffic density is comparatively low, but still sufficient to justify running air services. The "long, thin" aeroplane, therefore, is something at which a number of manufacturers have been looking, including Airbus Industrie itself with a four-engined B-11 to carry 180-200 passengers over 6,000 nautical miles; while Boeing is proposing its 777 three-engined 200-seater aircraft for over 4,500 nautical miles range, with a smaller version of the 777 for medium-range work.

So far, no orders have been placed for these "long, thin" types, but they are nonetheless developments which some of the manufacturers seem keen on exploiting. But, for the immediate future, it seems likely that the major manufacturers will be so committed in terms of money, manpower and factory capacity on their more immediate objectives — winning the biggest possible share of the large markets in the short-to-medium range field — that it may be some time before they are able to divert any of their resources to these other, smaller, markets.

Apart from all these ventures, there are some other significant new developments now under way, one of which is the Lockheed programme to produce its famous Hercules multi-purpose turbo - propeller powered transport aircraft as a wide-bodied airliner seating up to 108 passengers. Already, Lockheed has delivered to the world's airlines and military and other operators over 1,500 Hercules in 45 versions. The airliner version now offered will be able to use small airports, with 4,000-feet long runways, and provide airport communities with significantly lower noise levels than other types of aircraft.

M.D.

A Westland Sea King of the Royal Navy. A total of 200 Sea Kings has been ordered by nine nations for anti-submarine, anti-surface vessel, search and rescue, transport and VIP roles.

Big market for helicopters

THE HELICOPTER is now one of the fastest growing areas of world aviation, both in manufacture of aircraft and in the use of the finished civil and military products. While the number of flying hours performed by helicopters is still nowhere near the volume of that by fixed-wing aircraft, it is nonetheless rising at a spectacular rate, especially throughout the countries of the Third World, and is expected to continue. So far as sales are concerned, it is estimated that these amount now to more than £1bn worth of aircraft a year world-wide, and most of the major manufacturers remain convinced that this figure will continue to grow, probably doubling every three to five years, with special emphasis on the development of new types of aircraft for the expanding civil market.

The major growth areas for the helicopter are in the oil, gas and mineral exploration and development fields, executive transport, agricultural applications, law enforcement, emergency medical services of all kinds, and "heavy lift," for example in the construction and forestry industries.

So far as the oil, gas and mineral industries are concerned, as the frontiers of exploitable reserves are extended, so is demand likely to grow for vehicles and equipment to exploit those reserves, especially in the immediate offshore areas in many parts of the world. The helicopter is ideally suited to help exploit those offshore development programmes, in view of its inherent flexibility—its ability to land and take-off from small platforms which fixed-wing aircraft cannot use.

The corporate executive transport area is another that is particularly significant for the helicopter. The rapid increase in demand for smaller, comfortable civil helicopters to take executives directly from factory to factory, especially in the U.S., over distances of between 200 and 300 miles, has encouraged the manufacturers to either convert existing designs to civil use or to "custom design" new aircraft for this purpose, especially in the light twin-engined area.

Emerging

But a number of other major new uses for the helicopter are emerging, especially in the agricultural industry, where their flexibility is ensuring a growing employment in crop-spraying and supply dropping, while in the forestry field they are increasingly being used for logging operations and fire-control. In engineering, they are being used for such widely varied purposes as electric transmission line construction, and aerial surveying work.

These specialised uses for the helicopter have helped considerably to bring this branch of the world areospace industry to maturity. Coupled with this has been the fact that the manufacturers have devoted considerably increased attention to improving the technology of the helicopter, with more reliable rotor-heads, more efficient composite materials, improved power-plants and airborne electronics systems, thus giving the vehicle a new capability, broadening its range of uses, helping to bring down costs, and thus helping to improve its productivity.

At the same time, the military uses for helicopters have also been expanding, with the U.S. armed forces in particular tactically and strategically restructuring their plans round the helicopter as a logistics, work-horse, troop carrier, and combat weapons-carrying system—the "helicopter gunship" concept. As a result, significant new military helicopter design and development programmes are already emerging and more are expected over the next decade.

Spearheading these developments are the U.S. helicopter manufacturers. During 1977, they collectively delivered about 950 aircraft, with a total value of about $400m, compared with 775 aircraft, worth about $305m, in 1976. The U.S. industry's own estimate is that in the current year it will deliver over 1,100 units, with a value of $425m. The manufacturers say that they were not able fully to meet the demand that built up in 1977, and it is likely that this pressure will be sustained in 1978.

Battles

One of the major commercial battles that is developing is between the various types of light twin turbine-powered general-purpose helicopter notably the 12-passenger Sikorsky S-76, and the Bell eight-passenger Model 222, both of which will become available in 1978-79. Sikorsky, employing some 7,000, is one of the biggest helicopter manufacturers in the world, with several major models. The S-61 series of commercial helicopters is widely used in many versions for offshore oil and gas support and other transport purposes. The S-65, developed as a troop and cargo transport helicopter for the Marine Corps, is also used by the USAF for search and rescue operations. A commercial version of this aircraft, the S-65C, is under consideration. The CH-53E, an upgraded version of the S-65, is being developed for the U.S. Navy and Marine Corps use as a heavy-lift transport. Equipped with three engines, it is more powerful than the S-65, and has a payload capacity of over 16 tons.

The S-76 is a new all-weather helicopter designed for commercial applications from the start, including executive transport, offshore oil support, and general utility. It is claimed to have major technical advances which result in improved speed, range payload, fuel economy, and reliability. The S-76 also has potential non-commercial operations such as in search and rescue for the U.S. Coastguard, where a competition for a new helicopter is now in progress. Orders for the S-76 already stand at well over 100 aircraft.

In the military field, Sikorsky is developing a new utility tactical transport helicopter, the Black Hawk or UH-60A for the U.S. army. This will be one of the most significant helicopter programmes for the 1980s, with a stated requirement for 1,107 aircraft, representing over $2.5bn over eight years. A variant of the Black Hawk, the SH-60B, has also been selected by the U.S. navy for the Light Airborne Multi-Purpose System (LAMPS), calling for a production run of more than 200 aircraft worth more than $750m. Lamps missions will include anti-submarine warfare and anti-ship surveillance. Sikorsky has plans for commercial derivatives of both these aircraft, the 20-passenger S-78-20 and the 29-passenger S-78-29.

Among the other big manufacturers, Bell has already done much testing and customer demonstration flying with its new model 222, and expects to have the aircraft certificated for customer service by May next year. So far as other Bell models are concerned, demand for the coming year is already high, with production of some models sold out already, including the single-turbine model 205 and the general purpose twin-turbine model 212, with deliveries of these expected to be up about 15 per cent from the 1977 level. The sales backlog is reported to be strong for the Bell light single-engine Jet Ranger series. Bell expects to deliver about 110 helicopters to the international market in 1978, about the same as last year.

Hughes Helicopters anticipates that this year it will deliver about 365 civil aircraft, compared with 334 last year, with continued emphasis on such models as the piston-powered 300C three-seat light helicopter and the larger model 500D. The latter is especially prominent in company and executive markets, while the 300C is of interest in agricultural aviation and pilot training.

The smaller U.S. companies are also reporting strong growth. Enstrom Helicopter Corporation this year plans to deliver 120 aircraft, against 102 last year, with an increase in international deliveries to about 40 per cent of total production. This company specialises in two piston-powered models, the F-28C for the utility market, and the 280C Shark for corporate use.

So far as "big lift capability" is concerned, the commercial market is limited to the 18,000-20,000 lbs capability offered by the Sikorsky S-64E Skycrane, but orders are slow to emerge. Boeing-Vertol is considering a civil version of the military CH-47 Chinook of 28,000 lbs lift capability for the civil market. There is a growing demand for "big lift" capabilities, especially in the offshore oil and gas industries, and in the construction and logging industries. The Commercial Chinook has already aroused the interest of British Airways Helicopters, for use in its extensive North Sea oil and gas support operations, and Boeing-Vertol has said that it could get certification for the civil Chinook some 27 months after a customer's decision to buy the aircraft, thus launching the programme. Boeing is believed to feel that it could sell at least six commercial Chinooks a year for North Sea oil operations alone, every year through to 1990, with many other sales to operators in the "utilities" field.

Captured

In Western Europe, four manufacturers dominate the scene — Westland of the UK, Aérospatiale of France, Messerschmidt-Bolkow-Blohm of Western Germany and Agusta of Italy. These four companies have already captured substantial shares of world helicopter business, especially with the collaborative programmes between Westland and Aérospatiale on such aircraft as the Lynx multi-role helicopter, the Gazelle liaison aircraft, and the bigger Puma tactical transport helicopter. These three aircraft have been developed under the long-standing Anglo-French helicopter package, through which over 1,800 aircraft have now been built, of which over half have been exported outside the UK and France.

Other major collaborative helicopter ventures are now being planned. The Defence Ministers of the UK, West Germany, France and Italy recently signed a Declaration of Principles for the future development of several new types of helicopter for service from the mid to late 1980s, including a new anti-tank helicopter, a new tactical transport helicopter and a bigger replacement for the Sea King helicopter. Each of the four main European companies has ideas for aircraft in one or other of these areas, and they have collectively been studying the possibilities of collaboration on an industrial basis on one or more of these new types. At this stage, following the Defence Ministers' agreement, the aim is for the Chiefs of Staff of the four countries, in conjunction with the helicopter industries to produce a report on the co-ordination of requirements and timescales, to be submitted to the next meeting of the Defence Ministers in early 1979. From that meeting, it is hoped that some decisions will emerge that will crystallise much of the current thinking into firm industrial design and development programmes.

Replacement

Already, however, the companies *themselves have begun* to move in these directions. Westland is now working on the WG-34, intended to be a Sea King replacement, with international collaboration in its development firmly in mind. Little information is available about this prospective aircraft as yet, but it is expected to be roughly of the Sea King size and weight, and will carry advanced electronics for anti-submarine warfare as well as having a major search and rescue role. It is expected that it will also be suitable as a civil transport helicopter. The planned date of entry into service is 1988.

As to current programmes, Westland's forecasts are that future sales of Sea King and Commando helicopters will sustain the company's present production capability of 1½ to 2 aircraft a month for some time to come, with follow-on orders from Sea King customers likely. The company is also confident of more sales for the Lynx multi-role helicopter, especially of the Navy Lynx, with interest being shown in Spain as well as the Middle East.

Out of total orders for the Sea King to date of 183 aircraft, over 150 have been delivered, while of 32 Commandos ordered 28 have been delivered. Of Lynx orders for over 280 aircraft, over 65 have been delivered, while in the joint Anglo-French Gazelle programme 800 aircraft have been delivered out of more than 900 on order, while close to 600 Pumas have also been delivered out of 700 ordered.

In the meantime, a number of other new helicopter developments are under way in Europe. France and West Germany are jointly developing their own PAH-2 armed anti-tank helicopter, between Aérospatiale and MBB. Aérospatiale, now rapidly emerging as one of the world's major civil helicopter manufacturers, with over half its output for civil purposes, is working already on the Super Puma, a higher performance derivative of the existing Puma developed under the Anglo-French package, and also on a new version of the twin-engined, 10-passenger SA-365C Dauphin-2, which it intends to submit to the current competition in the U.S. to find a helicopter for the Coast Guard Service. In Western Germany, MBB is working with Kawasaki of Japan on the BK-117, an eight- to 12-seat multi-purpose light helicopter.

M.D.

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Space programmes switch emphasis

OVER THE past few years, following the completion of the most spectacular space mission yet—the Apollo programme involving the landing of several two-man missions on the Moon and their safe return to Earth—the emphasis in space activities has changed.

Now, with funds much tighter than in the past, the objective is to get the best value for every space dollar spent, and more and more unmanned satellites are being launched for a wide variety of both scientific and "applications technology" missions. The latter are increasingly becoming dominant, as the pressures increase on governments to ensure practical, usable returns from space. The list of unmanned satellites grows longer virtually daily—for telecommunications, weather forecasting and "earth resources monitoring" (ranging from mineral survey to the identification and tracking of fish shoals), quite apart from those less-publicised satellites launched for defence purposes that include the surveillance of each other's territory by both the U.S. and the Soviet Union and even "hunter-killer" satellites designed to seek out and if necessary neutralise or destroy satellites being used for military purposes by the other side.

As at December 31, 1977, the total number of spacecraft of various kinds (mostly satellites) launched from Earth had reached 2,146, of which 837 were of U.S. origin and 1,211 of Soviet origin. Included in this total were no less than 69 Lunar missions (36 U.S. and 33 Soviet Union), mostly unmanned but including the U.S. Apollo series of manned Lunar landing spacecraft. Deep-space planetary probes totalled 40, of which the U.S. had logged 13 and the Soviet Union 27.

Of the total spacecraft launched, the number still in orbit at the end of 1977 amounted to 936, of which 388 were of U.S. origin and 480 were Soviet craft. Most were in Earth orbit, but there were still 16 craft in Lunar orbit and 34 in Solar or planetary orbit.

So far as manned spaceflight is concerned, by the end of 1977 the total of man-hours spent in space had reached 38,144.4, with the U.S. accounting for 22,278.4 and the Soviet Union for 15,866, although both countries had achieved the same number of flights at 31 each.

Probes

The growing emphasis upon deriving the greatest possible practical benefits from space does not mean that interplanetary exploration has been dismissed as being of no value. Far from it, for the current budgets of the U.S. National Aeronautics and Space Administration includes funds for several "deep space probes," including the Pioneer spacecraft en route to Saturn, and continuation of the current Voyager mission in which two spacecraft have been despatched already on "fly-by" missions to both Jupiter and Saturn. As of July 1, this year, Voyager 1, launched on September 5 last year, had flown close to 685m miles through space, and was due to approach Jupiter early next March, while Voyager 2, launched on August 20 last year, had flown over 709m miles and was due to close on Jupiter early next July. Both satellites, having photographed the face of Jupiter, are then due to swing on in space for an encounter with Saturn in late 1980 and mid-1981 respectively.

But unmanned interplanetary "deep space" probes will continue to be the exceptions in future space developments, as the emphasis upon utilising the "near frontiers" of space for the long-term benefit of mankind continues to grow. In addition to the development of specific satellites for a wide variety of uses, renewed interest is being focused upon manned near-Earth orbiting "space laboratories." The U.S., for example, has been studying the possibility of reactivating its own Skylab for further use, while recently the Soviet Union has been making extensive use of its Salyut 6 space station.

Among other new developments in space now under serious study in the U.S. is a plan for launching massive satellite/space station complexes that would collect electrical energy from the sun by means of vast "solar arrays" — blocks of panels many miles square—for transmission to Earth by microwave beams. Initial studies have been funded by Congress—$25m is being spent in 1978-79—but any ultimate ventures of this kind would clearly cost many billions of dollars, take years to complete, and would become major international "space spectaculars" eclipsing even the manned Moon landings in significance and long-term importance for mankind.

One of the most significant of the current unmanned applications technology satellites in the long term is the European Orbital Test Satellite (OTS), the second of which was successfully launched from Cape Canaveral last May, to replace the first OTS which was destroyed last September when its U.S. launcher exploded shortly after lift-off. The OTS-2 is intended as a precursor of operational telecommunications and other satellites for the future. In particular, it is intended to pave the way for the operational European Communications Satellite (ECS) system, in which four operational satellites will be launched in the 1980s. A feature of the OTS-2, however, is that it is in effect a "bus" type of satellite—meaning that it involves a basic design of "space vehicle" which will be useful for carrying a wide variety of payloads on different missions for many years to come.

The future European Communications Satellite (ECS) programme itself is scheduled to start operating in 1981. It will be used by the members of the Conférence Européenne des Administrations des Postes et Télécommunications (CEPT) to complement the existing land-based telecommunications networks. In addition to carrying a portion of existing intra-European telephone traffic, it will provide an improved means of exchanging television programmes between the members of the European Broadcasting Union. The ECS system will be owned and managed by Eutelsat, an organisation set up by the European post and telecommunications administrations. The European Space Agency itself is expected to supply, launch and maintain in orbit the satellites required by Eutelsat—it has already approved production of two satellites — while individual countries' own postal and telecommunications organisations will be responsible for the construction and operation of their respective earth stations.

Goal

But while the launching of the OTS-2 is a major step towards the goal of a European regional communications satellite system, based on the ECS programme, the ultimate goal in Europe is to win a share of what is expected to be growing market for regional satellite systems throughout the world in the years ahead. The ability to offer complete "packages" of satellite capability, ranging from the design, development and manufacture of the space vehicles through to the provision of ground stations and the related infrastructure that gears them into individual countries' own local telephone and TV networks, will yield substantial business in the years ahead. Europe is determined to win a share of this and not leave it to be won by the U.S. European companies, through the work done on the OTS-2 and other programmes, as well as on specific national satellite programmes in their individual countries, have already shown a high technical competence in the telecommunications satellite field, which they must now translate into a commercial attack on world markets.

In addition to telecommunications, weather forecasting, and earth resources monitoring functions, the role of the geo-stationary satellite (that is, a satellite in a fixed position above the earth's surface) can be extended into other areas. Studies now in progress in Europe include the possibility of extensive data transmission at high speeds, for example between computer centres or databanks, or the transmission of information to be printed, such as documents or newspapers. Direct satellite broadcasting — that is, the transmission from satellites straight into TV sets in people's homes—is another area under study. Shipborne receiving stations are already making possible the direct communication via satellite with ships at sea (through the already functioning U.S. Marisat system and the forthcoming European Marots system). Today, more than 125 ships and offshore facilities are now equipped with mobile terminals to provide communications via the Marisat system.

Because of the current emphasis on unmanned satellites for a wide variety of technological and commercial applications, considerable significance attaches to the methods of launching such satellites in the future. This in turn means that increasing attention is being devoted to the two techniques now under development—the European Space Agency's Ariane rocket launcher system, and the U.S. National Aeronautics and Space Administration's Space Shuttle reusable Space Transport System.

The object of Ariane is to make Europe independently capable of launching satellites throughout the rest of this century. It represents one of Europe's most important space programmes this decade. The decision to go ahead with Ariane was taken in 1973, at the same time that it was decided to build the Spacelab, the manned orbital laboratory which will be Europe's contribution to the U.S. Space Shuttle, and the Marots maritime satellite. The UK has only a small stake (about 2.47 per cent) in the Ariane, the bulk of the cash (and the work) involved in its development (Frs 3,400m including a 20 per cent contingency allowance) being subscribed by France (nearly 64 per cent), with West Germany the second largest contributor at just over 20 per cent, the rest coming from Belgium, Denmark, Italy, the Netherlands, Spain, Sweden and Switzerland. The Ariane is a conventional rocket launcher—that is, the satellites are mounted aboard the launcher and thus conveyed into orbit, whereas the Space Shuttle will include a manned "Orbiter" vehicle that itself will go into orbit and be the satellite carrier.

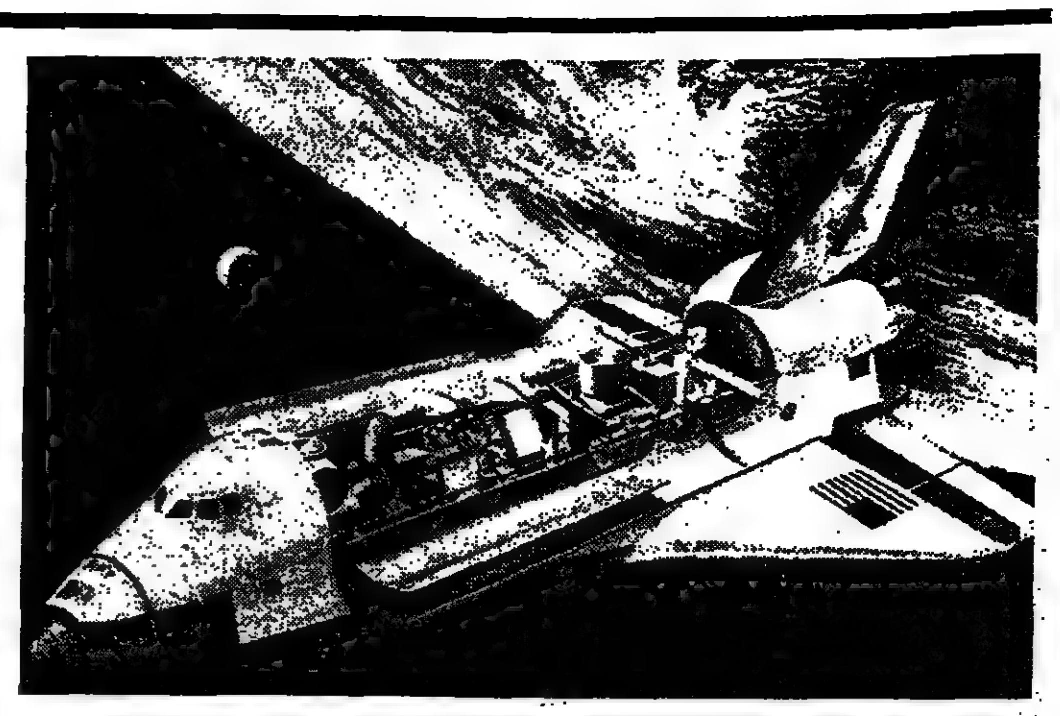
The first full flight test of Ariane is set for mid-1979, with the first fully operational Ariane becoming available the following year. The ESA has already approved the production of five operational Arianes. Three of these are intended for and will be financed by the following ESA programmes: the scientific satellite Exostat (in early 1981), the Marots-B maritime satellite (mid-1981), and the first ECS satellite (end-1981). One launcher is intended for the French Earth observation station, SPOT, and will be paid for by France, and the fifth operational Ariane, a reserve until it is assigned to a specific programme, will be financed by ESA member states. Thus Ariane has already begun to collect customers, and it is likely to prove a major competitor for the Space Shuttle through the 1980s and beyond.

Radical

The U.S. Space Shuttle represents a radical departure from the conventional method of launching unmanned payloads into space, in that a large rocket launcher, called a Booster, will inject into orbit a specially built vehicle, called an Orbiter, that in itself will be a manned spacecraft, capable of remaining in space for long periods of time. During those periods the small crew will be able to undertake a wide variety of missions, from launching satellites into prescribed orbits, rescuing and even repairing satellites already in orbit, and conducting a wide variety of research experiments and practical activities in near-Earth orbit. The Booster, having injected the Orbiter into its prescribed orbit, will fall back to Earth, splashing down into the sea for recovery and refurbishing for future use. The Orbiter itself, its mission completed, will be flown back into the Earth's atmosphere by its crew, and then down to a specially constructed runway at Cape Kennedy, Florida, where it will land rather like an ordinary large aircraft, and then itself be refurbished for further missions in space.

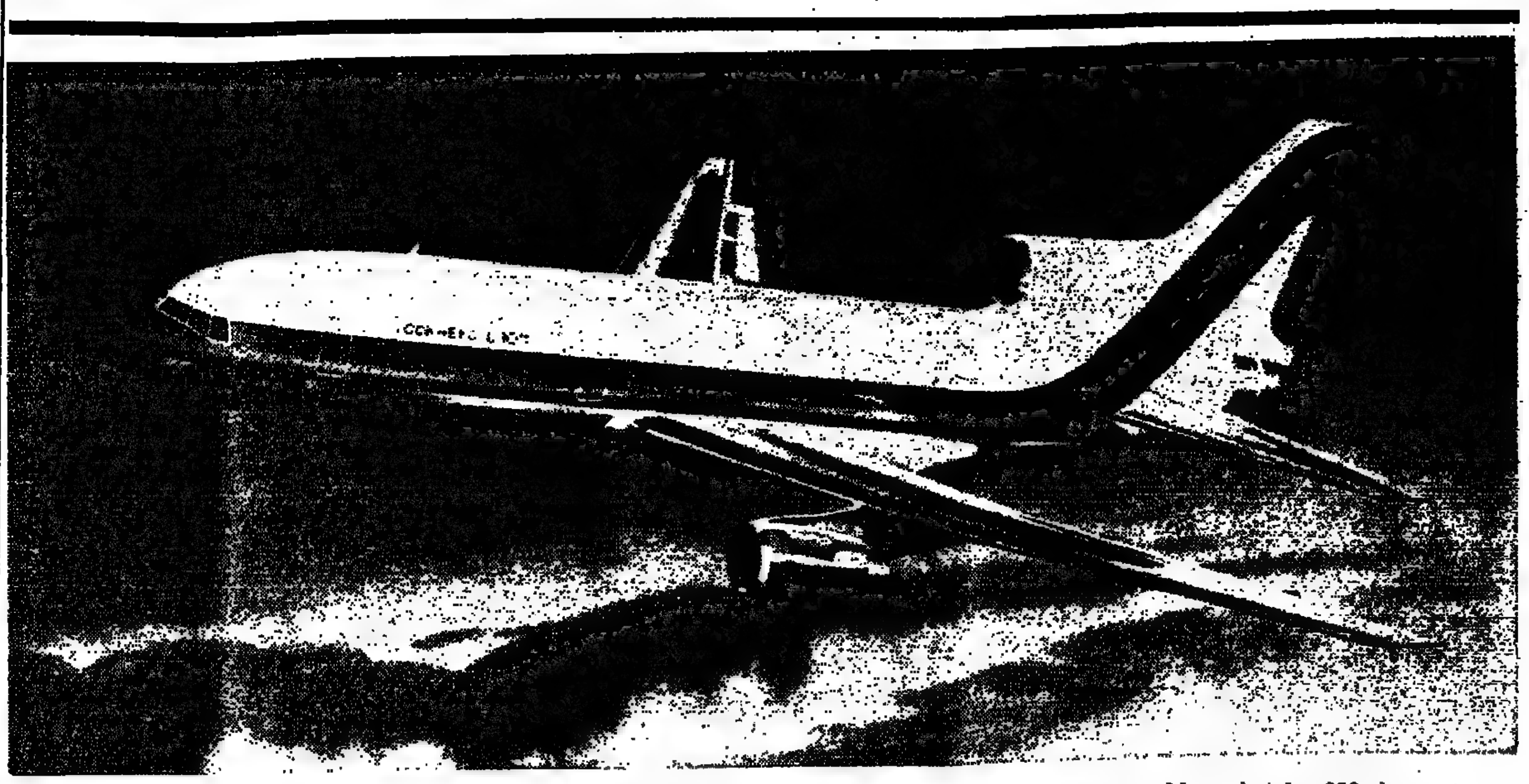
The Orbiter will have a large "cargo bay" into which will be stowed satellites for launching while on some occasions it will carry the European Spacelab, a manned "orbital workshop" in which a small crew will be able to live and work at various tasks in space. The objective of the Space Shuttle is to try to reduce the costs of space missions, particularly the cost of launching the increasing numbers of satellites, and to optimise on the technology already acquired over more than a decade of manned and unmanned development in space research. While the U.S. has said that the Space Shuttle will be available to other countries to launch their satellites, there have been fears that the cost per launch might be pitched too high, or even that the U.S. might effectively come to dominate Western world space-launch technology. It is for this reason primarily that the Europeans have opted to develop their own alternative launcher system, the Ariane.

M.D.



An artist's impression of the U.S. Space Shuttle—a programme for the development of a re-usable "Space Transport System" now under way in the U.S. The manned Orbiter vehicle shown here, would be boosted into orbit carrying a crew which would live and work in space for several days at a time. In this picture, the Orbiter is shown carrying the Spacelab manned orbital workshop in its cargo bay—Europe's contribution to the Space Shuttle programme.

AEROSPACE VIII



The Lockheed Dash 400 version of the Tri-Star, Lockheed's contribution to the fight for the growing world market for 200-plus seater airliners of the future.

The revolution in air transport

THE WORLD'S scheduled airlines over the past few months have been passing through one of the most traumatic periods in their history, in which virtually the entire shape and even the concept of scheduled air transport as it has developed over the past thirty years has been undergoing change. This revolution, for it is little short of that, is by no means over, and it seems likely that the scheduled carriers will have to face an extended period of uncertainty.

The revolution has been sparked off by the intensifying Governmental pressures in many of the major air transport generating areas of the world, but most notably in Western Europe and the U.S., in favour of much cheaper fares. While it would be wrong to argue that the scheduled airline industry is not, and has not, been in favour of cheaper fares—it has pioneered a number of major developments in this area over the past thirty years—it is true that it has always preferred to move cautiously, and to introduce those cheaper fares at a pace of its own choosing, with the result that it has sometimes been slower to respond to the development of market trends than some governments, such as the U.S., have wanted to see.

The breakthrough in the introduction of cheap fares, especially on the North Atlantic air route, for long regarded as the pacemaker route for much of what happens throughout the rest of the world airline industry, came last autumn, when after a long battle, Laker Airways, headed by the ebullient Sir Freddie Laker, was finally able to start its cheap-fare Skytrain, no-frills, walk-on, walk-off service between London and New York. In this context, it is worth remembering that for all its current vigour in promoting cheaper fares, the U.S. Government for years deliberately blocked Laker's plans for Skytrain, and they were only finally approved under the influence of Alfred Kahn, the newly-appointed consumerist chairman of the Civil Aeronautics Board, with enthusiastic support from President Carter himself.

Popular

Once the Skytrain scheme had begun, however, it was inevitable that the major scheduled airlines on the route should move to meet this new type of competition, with the introduction of their own Stand-By and Budget Plan fares on the same route. Subsequently, there can be no doubt that these cheap fares have proved immensely popular with the travelling public. But while Laker itself claims that it is making profits on Skytrain, there is still some reserve on the part of the scheduled airlines as to whether the move towards cheaper fares has been too rapid, and that rather than generating new traffic the cheap rates may have been drawing travellers away from higher classes of fare, such as economy class and even perhaps Advanced Purchase Excursion rates. Most of the scheduled airlines on the North Atlantic have argued that they would like to wait at least until this summer season is over before finally passing judgment on the ultra-cheap fares experiment of recent months.

Thus, a major Anglo-U.S. Governmental meeting is due to be held in October, at which a post-mortem on the past summer on the North Atlantic will be held. If experience has shown that the cheap fares have in fact generated traffic without diluting revenues and reducing or eliminating profits, then the way is likely to be clear for some consolidation or even extension of such rates through the coming winter and into next spring and summer. If, however, as some airlines frankly still believe, the results have not been as beneficial financially as had been hoped (some charter airlines are believed to have been badly hit), the outburst of consumarist fervour that marked the beginning of the summer may well have to be toned down in favour of a more rational approach.

Along with this move towards cheaper fares on the North Atlantic, there has also been a move towards cut-price air travel domestically in the U.S., and this past summer virtually every airline flying on domestic routes there has been carrying record traffic, with load factors rising to heights undreamt of even a year ago.

Command

This has also been in large measure due to the efforts of Mr. Kahn, who has taken firm command of the CAB and has shown that he intends to use it as an instrument to benefit the consumer rather more than the airlines. The wide-ranging nature of the cheap fares that his efforts have produced on U.S domestic air services over the past summer have resulted in peak loads—but this time, despite earlier gloomy forecasts by the airline, they have been matched with good profits. This would appear to show that, so far as internal U.S. air services are concerned, the move to cheap fares in the U.S. has been a success, and that they have generated sufficient new traffic to enable the airlines to improve their load factors and make money. Once again, however, many of the airlines concerned are tending to be cautious, and to refrain from comment until the summer season's results can be measured. But if, as now, seems likely, airlines really have benefited financially from the widespread introduction of cheap fares, not only will Mr. Kahn's consumerist doctrines have been vindicated, but also they will be more widely acceptable outside the U.S.

Coupled with this continuing move towards cheaper fares have been the measures to get rid of many of the rigid rules and regulations which have characterised the scheduled airlines' body, the International Air Transport Association, for many years. Only last November, at the IATA annual meeting in Madrid, Mr. Knut Hammarskjold, the director-general of the Association, recognised the signs that were emerging and warned the delegates that they would have to move quickly if they were not to be overtaken by events and by the reactions of governments to those events—in particular, the reactions of the U.S. Government, which increasingly over recent years had shown itself hostile to the basic tenets of the IATA, and to the principle of fixing fares in major "tariff conferences."

As a result of Mr. Hammarskjold's warning, the IATA set up a small five-member task-force to analyse the problem and to propose solutions. This in turn resulted in the special general meeting of the Association in Montreal this summer.

At that meeting, the delegates approved by a show of hands the most far-reaching changes in the Association's methods of operation since it was first established in 1944. Basically, the programme of reforms will create two new levels of membership of the IATA. One level will be mandatory, dealing with all the many legal, financial, technical and safety matters that, in fact, account for up to 80 per cent of the work of the Association. Any airline joining the Association, or remaining in it, will be obliged to participate fully in these affairs, for they are crucial to the smooth functioning of the world scheduled air transport sytem. They include, for example, such things as standardisation of ticketing and baggage handling procedures, the handling of air cargo, air traffic control techniques and other safety matters, legal affairs and most significantly of all, participation in the "clearing house" through which virtually all inter-airline financial transactions are processed, amounting to several thousand million dollars' worth of business every year. These are the "bread and butter," day-to-day activities of the Association, which are essential to the whole airline business and for which, if IATA were to collapse, governments would be hard put to find alternatives.

The second planned new category of membership is more complex in its operation. Broadly, it will give to those airlines who are members of the Association the right to decide whether or not they wish to participate in the complex, time-consuming business of fixing fares and cargo rates through what are known as "traffic conferences." Hitherto, the Association's rules have required that all its members must participate in all its affairs, including fares-fixing. Now, it is being proposed that airlines at each end of a given route—say the North Atlantic between the UK and the U.S.—need not belong to the relevant tariff conference, but can, if they wish, opt out, and fix fares for that route by mutual consent, subject only to the approval of their governments.

Individual airlines, in fact, will thus get the right to introduce new, "innovative" fares between their respective countries without recourse to the previous cumbersome machinery of the IATA traffic conferences. This, it is felt, could make it possible for the major airlines on any route to respond more quickly to the rapidly changing circumstances of the 'market-place, without having to run the gauntlet of fares conferences at which small airlines with no direct interest in a given route might otherwise be able to block any proposals the bigger airlines make.

In effect, this seems to be only giving recognition to what has become a de facto situation, especially on the North Atlantic, where previous IATA fares plans have frequently been vetoed by individual airlines or by governments — and again especially the U.S. Government —with direct inter-governmental fares policies being negotiated and introduced instead. It could, if adopted, mean that in future some airlines may revert to arranging their own fares policies among themselves, instead of having governments do it for them.

Rules

Apart from the possibility of simplifying fares-making policies, the Montreal meeting opened the possibility of competition in other directions, and especially in the quality of service to passengers aboard flights. Hitherto, the IATA rules have laid down the precise quality and quantity of meals in economy-class sections, together with scales of charges for drinks and in-flight entertainment, while also fixing the overall level of comfort, for example, by determining the "seat pitch"—the distance between the top of one seat and that behind it. This has meant that on most major air routes, airlines often have been flying the same equipment, charging the same fares and offering the same quality of meals, with drinks and in-flight entertainment at the same prices. The only areas left in which they have been able to compete has been the somewhat ephemeral one of "personal service." Now, it is hoped that the airlines will be able to compete more directly on a more effective basis, with the passengers able to shop around for the best prices and quality of service they can get.

But the big question still to be resolved is how far all these reforms in favour of fares-fixing and the quality of service will get. The powerful IATA Executive Committee, since the Montreal meeting, has been working out the details of the proposed changes, and is due to consider them at its next meeting in mid-September. It is probable, therefore, that by the time the IATA airlines go to their next full annual meeting in November in Geneva, they will have a clearer indication of how these reforms are going to be introduced. It must also be borne in mind that the governments of all the airlines concerned have yet to approve the changes in detail, and that there are some airlines, and governments, who are not in favour of the changes as proposed in Montreal. It is possible that by the time the Executive Committee meets in mid-September, some of the Montreal decisions may have been substantially modified.

But what is clear from all this is that the world airline industry is undergoing rapid change, and that by the end of 1978 it will not be the same as it was at the beginning of the year. The impact of cheap fares on many world air routes, coupled with both an increasing rate of traffic growth if world economic conditions continue to improve, and the internal changes that these factors, together with more radical governmental attitudes to civil aviation, have forced upon the airline industry, will all ensure that the industry is being set upon a new course. The wind of change has been blowing throughout 1978 in the boardrooms of the world's major airlines, and the conference halls of the IATA, and the dust that it has raised will take some considerable time to settle.

M.D.

AEROSPACE IX

Boredom and improvised sleeping arrangements reflect the trials of thousands of holidaymakers in Britain's airport lounges during the long flight delays caused this summer by the go-slow by French and Spanish air traffic controllers.

Events overtake UK airports strategy

THE GOVERNMENT strategy for meeting the need for additional airport capacity in the South East of England may well be overtaken by events as a result of the recovery in the rate of growth in air travel.

The last official statement on airport plans, published by the Government in its White Paper on Airports Policy in February, said extra capacity in the South East to meet rising demand from air travellers up to 1990 could be met by expanding existing airports. There would be no need for—or possibility of—a new airport until then.

The plans were based on short and long term estimates of the likely demand from air travellers and of the capacity which should be made available. In the short term, up to 1990, the Government strategy envisaged four ways of providing the extra capacity in the South East.

First, the British Airports Authority's proposals for a fourth terminal at Heathrow Airport, London to raise capacity by 8m to 38m passengers a year should be examined at a Public Inquiry. This is now sitting and sifting evidence from the BAA, environmentalists and local lobby groups. The White Paper said there should be no fifth terminal at Heathrow.

Proposals

Second, the Paper called for the BAA to bring forward proposals for a second terminal at Gatwick Airport, Surrey, to raise capacity from 16m to 25m passengers a year. There should be no second runway there.

Third, extra capacity to 1990 could be provided by a limited development at Stansted Airport, Essex, boosting the airport's capacity from 1m to 4m passengers a year. The BAA was urged to bring forward these limited plans for developing the airport.

The White Paper recommended that Luton Airport, which is owned and operated by the local authority, should have a maximum passenger handling capability of 5m passengers a year.

These developments, if carried out in a planned and progressive way would give the four London airports a total capacity of about 72m passengers a year. This compared with a total forecast demand in 1990 of between 66m and 89m passengers. The Government suggested that the uncertainties at the higher end of this range were such that the proposals would be sufficient to accommodate the more likely air traffic growth in the London area throughout the 1980s.

In the longer term, after 1990, the Government accepted that there was a likely need for additional capacity. This could be met by one of three options.

There could be a major development at Stansted, conversion of an existing military airport which could be developed as a civil airport, or a new airport could be constructed.

Outside the London and south-east area there was now excess capacity. The Government proposed that services should be concentrated on fewer airports. The national airports systems should be rationalised into four categories.

There should be Gateway International Airports providing a wide range and frequency of international services, including intercontinental and domestic services. Regional airports should operate as a second tier by providing short-haul international services, a range of charter services and domestic services linked with the Gateway airports.

On top of this primary structure, there would be Local Airports, meeting the traffic needs of scheduled passenger services operated by aircraft with less than 25 seats. They would also handle general aviation, domestic feeder services and some charter flights.

At the bottom of the structure, and essentially outside the demands of most air travellers, would be the general aviation airports. These would be concerned with business, recreational and flying training traffic.

These organisational changes are certain to affect the running of all of Britain's airports. But for the air traveller, the airlines and the airport authorities in the South East, the major issue is that of providing extra capacity to match the forecast growth in air traffic to the end of the century.

At Heathrow Airport alone, growth in passenger traffic so far this year has outstripped the 3 to 5 per cent increase forecast last year. The British Airports Authority said it is now running at an annual growth rate of 8 per cent, a rate of increase likely to continue at least for the foreseeable future.

In this scenario only the Government appears to have conservative views on the prospects for air traffic growth. The British Airports Authority, which owns and administers seven major airports, including Heathrow and Gatwick, is convinced the recent acceleration in the rate of growth is not a passing phenomenon.

The Authority responded to the White Paper by saying that the Government policy carried a strong risk that capacity would not be adequate to meet demand in the late 1980s, and that there was a strong likelihood that one of the longer term options in the White Paper would be needed before 1990.

At Heathrow the rising demand for air travel has lifted the total number of passengers to be handled this year from a forecast 24m to 26m. The demand has been met by the introduction of new and larger wide-bodied aircraft, such as the Lockheed TriStar and the Boeing 747 Jumbo jet, which have coped with the rise in traffic without straining runway capacity. The strain instead has been transferred to airport terminals.

With the possibility of up to 89m passengers each year at South-East airports by the late 1980s, and with new airports needing a 12-year "lead time" to develop, the BAA is anxious that there should be a minimum of delay with the expansion of capacity at existing airports.

At the urging of the Airports Authority, both the Advisory Committee on Airports Policy and the Study Group on South-East airports, have been set up by the Government, to consider urgently solutions to the traffic handling problems which are regarded as inevitable in the South-East in the mid-1980s.

Discuss

By bringing together representatives of the Government, the Airports Authority, local authorities, trades unions, airlines, environmental groups and other interested parties, the two bodies should be able to discuss in detail the problems involved in prospective new airport developments, so that time-consuming delays such as Public Planning Inquiries can perhaps be either avoided or completed in good time so as to prevent unnecessary hold-ups in providing the new terminal capacity that is likely to be needed in the mid to late 1980s.

In the meantime, BAA has a £243m five-year programme (at March 1978 prices), of development at its seven airports. Most of this is in the South East. Major redevelopment at the Scottish airports run by the BAA is now complete.

The traffic forecasts used by the BAA in its five year plan reflect the gradual recovery of the UK economy. Terminal passengers at the South East airports are forecast to grow from 30.6m in 1977/78 to 44.1m in 1982/83. At the Scottish airports the growth is expected to be from 4m in 1977/78 to 5.4m in 1982/83. But demand at the South East airports could range from 39.7m to 48m in 1982/83. Over 6m could be the top figure for the Scottish airports.

Cargo traffic is forecast to grow at South East airports from 575,000 tonnes in 1977/78 to 914,000 tonnes in 1982/83. At the Scottish airports the forecast over the period is from 39,000 tonnes to 48,000 tonnes.

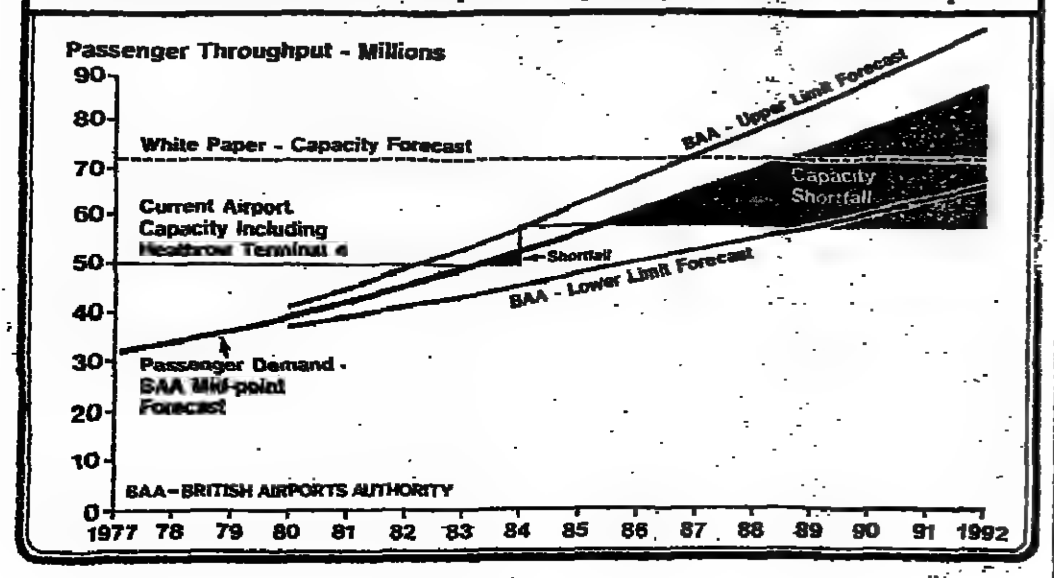
The Authority has warned that delays to the expansion programme, including particularly the fourth terminal at Heathrow (likely to cost over £33m), would mean the need for a more rapid increase in the transfer of flights from Heathrow to Gatwick.

All "whole-charter" flights now have to use Gatwick, and the BAA would also like to see more scheduled flights using the airport.

The UK Government, after attempts at persuasion, has now directed Iberia of Spain and TAP of Portugal to move to Gatwick — a decision that is inevitably having political repercussions — but the UK intends to persist with this policy, and discusions have also been held with the Canadians, with the Scandinavians perhaps next on the list.

Lynton McLain

Forecast Demand and Airport Capacity - South East Airports



Advances in airborne avionics

ONE OF the most significant developments in the world aerospace industry over the past decade has been the rapid growth of the airborne equipment sector, with particular emphasis on avionics (aviation electronics).

In many cases the advances in electronic aids have been so great and the potential benefits so cost-effective that airframe manufacturers have been able to update, and almost redesign from the inside, well-established aircraft. This has extended the life of the aircraft and led to the development of derivatives, essentially similar in external appearance but housing radical innovations in the avionics equipment.

The manufacturers of avionics, components, systems and ancillary equipment in particular find major air displays like the forthcoming Farnborough display next week a valuable show-case for their wares, and in many instances they secure substantial business either directly because of what is exhibited there or as a result of the new contacts with foreign purchasers that they make during the show. Consequently, more than in any other area of aerospace, the avionics and equipment companies use the Farnborough (and Paris) air shows as launching platforms for new products, and this year's Farnborough display is no exception, with a vast number of new developments likely to be seen.

With equipment and systems of all kinds already effectively representing up to as much as one-third of the value of a complex modern aircraft (and even more in the case of some of the more advanced military aircraft), this side of the world's aerospace industry has expanded rapidly in recent years, and is becoming of increasing importance as the emphasis grows in aviation on such things as automatic landing equipment, new navigational aids, collision-avoidance and storm-warning systems, and improved communications techniques.

During the first six months of this year, the avionics and equipment manufacturers achieved record exports, with instrument exports amounting to over £28m and radio, navigation and radar aids nearly £8.5m.

In the general aviation sector, embracing all types of aircraft from business jets to light single-engined sports models, weight and compact design are among the primary criteria governing choice of new equipment. Miniaturisation of electronic circuits for airborne equipment has done a great deal to increase the amount of disposable space in small, fixed-wing aircraft and helicopters. This has opened the way for even the smallest aircraft to be fitted with relatively advanced avionics.

Some of the most dramatic advances in recent years have taken place in the field of radar. Equipment can vary from the very simple to expensive and complex items offering up-to-the-minute features, including colour radar screen indicators even for light aircraft. A comprehensive system designed by the U.S. Bendix Corporation, the BX-2000, costs up to $80,000 including navigation displays.

Miniaturisation of recent equipment is displayed well in the new lightweight weather radar system developed by RCA. The antennae and much of the electronics for the company's Weather-Scout I system is tailor-made to fit inside the leading edge of the wing of small aircraft, giving warnings of nearby storms and thunder clouds without the penalty of a high drag-inducing radar pod.

The Weather Scout 2, launched this summer at less than £3,000, is one of the cheapest conventional radar sets yet offered.

Communications equipment is almost essential for all types of small general aviation aircraft. The major manufacturers include Collins and Bendix in the U.S., and GEC-Marconi in Britain.

Range and bearing information is displayed in digital form in units now on the market. Some models provide additional facilities including vertical as well as area navigation. Digital distance measuring equipment is also available now at a fraction of the cost of earlier equipment.

Precise position-fixing equipment can be bought for light and business aircraft use for less than £2,000 and some manufacturers believe that this price will fall further in the years ahead as demand rises and as design and production techniques take advantage of new advances in electronics.

To date, the growing use of weather radar has been the only application of cathode ray tubes in light aircraft. But these miniature television tubes can combine a variety of indicator functions, including weather information, navigation data and a range of cockpit and engine performance data. Moves to develop equipment with this range of versatility is well under way, particularly in the U.S., where Bendix and RCA lead the field.

In Britain as well as the U.S. work is progressing on light aircraft developments of airliner autopilots. The Smiths Industries' SEP.10 is a new digital/analogue computer-based system with many characteristics common to airliner installations. Sperry has a similar system which is already being fitted to the larger business jets. The Smiths equipment was developed as a joint venture with the Department of Industry and is now being tested on a British Aerospace Jetstream turboprop aircraft operated by Cranfield College of Technology, Bedfordshire.

Additional flight test work will be done on the British Aerospace HS 748, which will carry the first production SEP.10 autopilots.

Executive jets are also the greatest users in the general aviation field of expensive inertial navigation systems. With these systems costing more than some light aircraft, at over £50,000, there is little demand for such systems. Similarly, the lighter aircraft have little requirement for the growing range of complex fuel management systems, performance computers and ground-proximity warning systems, although the latter could be

CONTINUED ON NEXT PAGE

Flying as a sport

THERE CAN be no doubt about the popularity of leisure flying when as many as 50,000 enthusiasts each year take to the air for fun. Many more get pleasure from watching others fly in powered light aircraft, in gliders, under hang gliders or hot air or helium balloons.

Powered private flight is the most expensive of the aerial options open to the would-be leisure flyer. It is also the most time-consuming in hours of flight necessary to obtain a licence but it can give a far greater degree of freedom than other forms — although exponents of unpowered flight would probably disagree.

Nevertheless, whatever the charms of ballooning, hang gliding or gliding, powered flight has the indisputable freedom of enabling the participant to go wherever he wishes, as long as there is an airfield, however rudimentary.

There is no shortage of facilities for the intending private pilot. Britain boasts between 150 and 200 flying clubs or groups of enthusiasts. The British Aircraft Owners and Pilots Association has almost 90 clubs in Britain in corporate membership and all offer full or part-time training facilities for those wishing to practise and study for the pilot's licence.

Under arrangements laid down by the Civil Aviation Authority there are minimum standards for courses leading to the private licence. There are two ways to get this, the final choice depending on time available and the degree of application of the individual student.

The first and most formal scheme involves training at an approved school with a minimum of 35 hours of flying to be completed within six months. On top of this students have to take a written examination on technical subjects including navigation and a general flying test.

This scheme of training is the most appropriate for students with all the time in the world for a concentrated burst of training. For those who would rather take their flying training more leisurely, the CAA has authorised a 40-hour standard course which can be completed over any length of time. Intending solo pilots must be over 17 years of age, hold a valid medical certificate and students must complete a minimum of 10 hours solo.

The one constraint is that the student has to complete the mandatory three written examinations within 12 weeks of each other and within six months of completing the required 40 hours of flying training.

Interest in the sport, or the obsession as it can become to some enthusiasts, shows no signs of tailing off, according to the Aircraft Owners and Pilots Association. This is despite the estimated cost of between £800 and £1,000 for the competent student to acquire his licence on a single internal combustion-powered aircraft in the group A weight limit of up to 12,500 lbs.

The majority of British flying clubs cater for the student who wants to take his time over obtaining his licence. For the typical student, the exercise is a hobby and time is not of the essence, so long as the trainee pilot enjoys the exacting disciplines required in a fully competent pilot.

When the student has completed his tasks and the pleasures of examinations in the air, he or she may at leisure hire one of the 517 general aviation aircraft owned and operated for pleasure flying by Britain's flying clubs and groups. There are now approximately 21,000 to 22,000 holders of British pilots' licences compared with the estimated 8,000 to 9,000 professional pilots, according to the annual report of the Civil Aviation Authority.

Thrill

For those interested in taking a trial flight in a small, single-engined aircraft, not to taste the stomach-turning thrill of looping the loop but to test their dreams against the reality of sports flying, aircraft may be hired for short flights. A 20-minute flight for a single person with a qualified pilot is likely to cost between £5 and £10, depending on the aircraft type and the club.

One branch of leisure flying which is almost unaffected by the rise in oil prices is gliding. "Almost" is the qualifying word because there is a growing band of enthusiasts for the powered glider, which uses a small piston engine for brief bursts of powered flight to gain access to rising thermals or even to take-off. Other ancillary fuel costs arise during towed launches, either by winch or by small single-engined aircraft.

Gliding has some attractive advantages over powered flight. The British Gliding Association, which controls the sport in Britain, is careful not to over-emphasise the joys of silent flights of fancy in the gently swirling clouds above the troubles of the world. There can be no doubt that many glider enthusiasts feel a sense of release, in more than one sense, when the tow hook falls back to earth.

But that line, falling away from what may be the only source of man-controlled power, also marks the start of the supreme challenge for the glider pilot. Staying aloft with the aid of rising thermals can be a fascinating, if unpredictable exercise.

There are other challenges based on this search for rising warm air. No longer are glider pilots content to release their tow hook and drift gently back to earth. The name of the gliding game in 1978 is to attain long distance cross-country routes as great as the current world record of over 1,000 km.

But excellence in gliding is no longer confined to the West Germans, the Poles and others with a long history of glider design, manufacture and success in the sport. Last month Mr George Lee, an RAF pilot, won the world gliding championship for the second successive time, during contests held at Chateauroux in France. Over 80 gliders took part, racing around a 500 to 600 km circuit above the French countryside.

For the amateur, or the aspiring world champion, gliding is likely to be a good deal cheaper than powered flight for an afternoon's recreation above the clouds. Over 100 clubs are dotted around carefully chosen locations in Britain. At least 60 per cent of them offer week-long holiday courses — the easiest way to learn to fly a glider, according to the British Gliding Association, which is pleased to supply details.

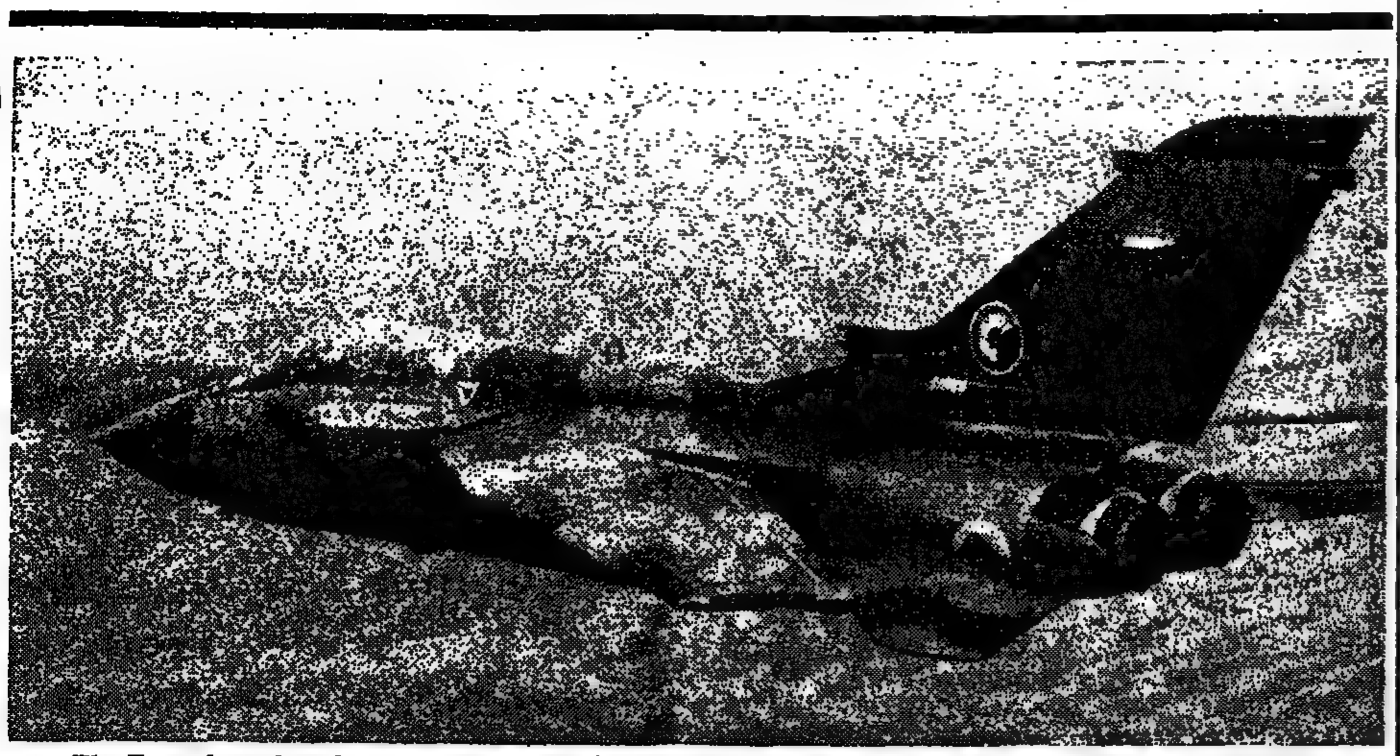
It requires about 50 launches for the student pilot to gain the experience needed to go solo. Costs are around £5 an hour but many enthusiasts join together in ownership syndicates, perhaps buying a second-hand glider for as little as £1,000. This compares with the £17,000 to £18,000 needed to buy a world championship glider of the standard used by Mr. Lee last month. The cheapest new glider costs around £6,500.

These costs, to which must be added clothing, helmets and boots, compare favourably with other sports, particularly sailing. The gliding association said its sport was growing at 6 per cent per annum, a popularity which was achieved without any sales effort.

In the South East the sport is now so popular that clubs have waiting lists, a result also of the shortage of land suitable for glider airfields under airspace cleared for this type of flying.

The other type of gliding, without frills or a closed cockpit, is hang-gliding. The British Hang-Gliding Association, based in Somerset, estimates that there are now 5,000 adherents to the sport in Britain. This may represent a plateau of likely membership, as the association said the total was rising only slowly.

Lynton McLain



The Tornado multi-role combat aircraft, which will form the main strength of the RAF in the 1980s.

Operational boost for the RAF

THE RAF is now preparing a major step forward, with the delivery in early 1980 of the first of what will eventually become a force of 385 Tornado multi-role combat aircraft.

This aircraft, coming in such numbers, represents the biggest boost the RAF has had for many years, and it is likely not only substantially to improve its capabilities militarily, but also do much to boost morale which has suffered in recent years both from a lack of adequate new equipment, successive reductions in spending through Government cuts in overall defence budgets, and failure on the part of Government to keep services' pay levels comparable with those in civilian life.

The result of these problems has been not only a steady drain from the service of a substantial number of its most highly qualified personnel, but also considerable difficulties in recruiting adequate numbers of men of the right calibre to fill the gaps. Recent pay awards by the Government, although going some way towards meeting some of the complaints in the service, have certainly not gone far enough, and both the drain on technicians and recruiting difficulties seem likely to persist for some time to come unless further significant pay rises are permitted soon.

It is for these reasons that the Service chiefs are putting considerable emphasis on the introduction of the Tornado, for in it they can see the opportunity of improving the RAF both quantitatively and qualitatively, at a time when the build-up of Warsaw Pact conventional forces, including tactical combat aircraft, is gathering momentum.

As Air Chief Marshal Sir Michael Beetham, Chief of the Air Staff, commented earlier this summer: "We are still short of numbers in both aircraft and missiles. The 3 per cent growth in the Defence Budget will give us the welcome opportunity to push more resources in this direction, but we still have a good deal of catching up to do, if we are to match the growing threat to our country."

The Tornado is a multi-role combat aircraft, designed to replace a number of ageing aircraft in the service, including principally the Canberra reconnaissance aircraft, the Buccaneer strike aircraft, the Lightning strike and air-superiority aircraft, the Vulcan interdicter-strike and reconnaissance aircraft and eventually also the Phantom combat aircraft. The Tornado is an all-weather, swinging-wing supersonic aircraft, produced by an international company called Panavia, comprising British Aerospace, Messerschmitt-Bolkow-Blohm of West Germany and Aeritalia of Italy. The aircraft is powered by two new-technology RB-199 engines, produced by Turbo-Union, a joint company established by Rolls-Royce, Motoren-und-Turbinen Union of West Germany and Fiat of Italy. Of the 809 aircraft planned, 385 are for the RAF, 324 for the German Air Force and Navy and 100 for the Italian Air Force. The number of production Tornado aircraft already ordered is 150, and further batches are planned progressively over the years ahead to bring the eventual total to 809, while the prospect for export orders cannot be discounted.

Basic

Of the UK's 385 aircraft, 220 will be of the basic version (the type that will be delivered from next year) that will be commbo to the three participant countries in the programme, called the Interdicter Strike version (or IDS) and intended primarily for battlefield interdiction: close air support; counter air-strike; naval strike; air superiority and reconnaissance. The remaining 165 aircraft for the RAF will be of a different model, the Air Defence Variant (ADV), which will be intended for interception and the air defence of Britain, for which purposes it will be equipped with a UK-developed air-intercept radar, and with Sky Flash and Sidewinder air-to-air missiles. The ADV is designed to loiter far out over the North Sea and Atlantic approaches, to be able to detect, identify and destroy enemy aircraft at distant ranges. The ADV will arrive later in service than the basic IDS version, being delivered early in the 1980s. The prototype ADVs are now being built, and will fly during 1979.

The Tornado will be capable of speeds of more than twice that of sound at high altitude, with its wings swept back, while the aircraft will also be able to land and take off at slow speeds on dispersed sites with its wings swept forward. Inevitably, an aeroplane of such high performance will be expensive. Detailed costs are not available, but the most recent figure given by the UK Ministry of Defence for the aircraft is a unit production price of £7.9m for the basic version and £9.4m for the ADV in 1978-79 prices. The overall production programme of 809 aircraft is not likely to be costing the three countries much less than about £7bn, while research and development has to be added to this. It seems likely, therefore, that the eventual overall cost of the Tornado to the three countries will be in excess of £7.5bn, and it is not surprising that the RAF is treating the aircraft with immense respect.

The manufacturing programme is the biggest yet seen on a military aircraft in Europe in peace time. At its peak production rate, over the next year or two, it will be employing some 10,000 workers in British Aerospace, 6,000 at Rolls-Royce and some 8,000 in equipment and avionics programmes. Indirectly, it will employ another 12,000 on ancillary industrial tasks. A similar number will be employed in West Germany, and some 10,000 in Italy — a total of around 80,000 in the three countries, and involving more than 500 companies.

The Tornado is not the only new aircraft joining the RAF in the near future. A fleet of four-engined Nimrod anti-submarine warfare aircraft is now being modified by British Aerospace at its Woodford, Lancashire, factory, to undertake the Airborne Early Warning role — the detection at an early stage of enemy aircraft approaching the NATO airspace far out over the North Atlantic. The AEW Nimrod is the British equivalent of the U.S. Boeing Airborne Warning and Control System (AWACS), which is being used both by the U.S. Air Force and is planned for other NATO nations, and is intended to be compatible with the Nimrod. For the anti-submarine warfare role, the existing Nimrods in RAF service are being progressively modified and updated to improve their submarine detection and destruction capabilities.

In addition, a long-standing RAF need for a medium-lift helicopter has been met by an order for 30 of the big Boeing [illegible] CH-47 Chinooks, costing some $200m in all, and with deliveries due to start around mid-1980. Also, earlier this year, it was announced that the RAF's long-range strategic tanker force for refuelling combat aircraft far from base was being strengthened with an infusion of up to nine VC-10 aircraft, bought from airlines and now being refurbished and modified for tanker duties by British Aerospace. These will supplement the present force of Victor tankers. Hawk trainers are also now moving into service. In the transport field, the Hercules fleet of tactical and strategic transports are being reconditioned to enable them to serve at least until the late 1980s. The Sea King helicopter is coming into service with the RAF for search and rescue duties.

So far as the air defence of this country in itself is concerned, it has been recognised that the development of long-range strategic bombers by the Soviet Union is resulting in an increasing threat to the UK and the Western seaboards of other NATO European countries — an attack via the back door is just as much a possibility as an attack across the Central European land-mass itself, especially now that the Soviet Union has the Backfire long-range supersonic bomber in service.

For this reason, considerable emphasis has been put in recent months on the improvement of the UK's own air defences. The Air Defence Variant of the Tornado coupled with the Airborne Early Warning Nimrods, the Sky-Flash air-to-air missile and the improvements in the tanker force, will do much to help improve this situation, but in addition, measures which are being taken at home include increased numbers of surface-to-air missiles, including Bloodhound and Rapier, hardened shelters for aircraft and other key installations, and wider aircraft dispersal.

Enhance

Beyond this, the RAF is looking at a wide variety of new developments to enhance its combat capabilities in the future, when increasingly complex technology is bound to be matched by continued or perhaps even increasing financial stringency. The RAF makes the point that it is not necessarily in business to perpetuate manned aeroplanes as such and that there are many other developments than can also prove useful. These include improved methods of low-level intrusion, perhaps by "stand-off" weapons such as Cruise Missiles, together with improved "electronic counter-measures," and better techniques of target identification and acquisition and improved weapons accuracy. The possibility of such revolutionary techniques as "in-flight re-arming" is not being overlooked, although this might prove technologically difficult.

At the same time, considerable emphasis is being placed behind the scenes on the development of the so-called Jaguar-Harrier replacement for the late 1980s. Currently known as Air Staff Target 403, the primary aim is to try to evolve a light-weight, fast, highly manoeuvrable strike-attack aircraft capable of also holding its own in air-to-air-combat.

The aim is not to develop just an improved Jaguar or a Super-Harrier, but to try to identify the possible tasks confronting the RAF 10 to 20 years ahead, and to develop an aircraft that will be able to meet them. This means that the RAF's planners must try to forecast not only what the enemy might be doing 10 to 20 years from now, but also what the "state of the art" will be in such things as micro-electronics, composite materials, guidance systems and weapons capabilities. It is a formidable challenge, and one in which a great deal of effort is being placed. The detailed conception of this new aircraft is proceeding slowly, with strong emphasis being placed on the possibility of international collaboration. But that such an aircraft will eventually emerge is inevitable, for it will be essential to supplement the Tornado in the RAF's front-line capability in the 1990s and probably even beyond.

M.D.

Avionics

CONTINUED FROM PREVIOUS PAGE

used with advantage by many aircraft of all types for additional flight safety.

In the military field British companies have a world lead in certain specialised areas. The Decca Navigator Company has recently been awarded a contract from the British Ministry of Defence for £2m worth of Doppler navigation and automatic chart equipment. The Doppler 80 equipment is being fitted to the Westland/Aérospatiale Gazelle helicopters and similar systems have been fitted to the Tornado multi-role combat aircraft. Decca says there is considerable export potential for the Doppler 80 system. Over 1,400 of the earlier Doppler 70 systems were made, and fitted to some 86 different types of fixed and rotary wing aircraft used by 45 countries.

Marconi Avionics is nearing completion of a four-year programme to adapt its AD 620 military area-navigation system to civil use. The system has the advantage of using existing aircraft instrumentation, and Marconi expects the system to be available on the general aviation market within two years. The company is expected to aim the greater proportion of sales of the new system at the North American market, through Canadian Marconi, at a unit price of slightly more than £7,500.

Marconi Avionics, which is a part of the GEC-Marconi Electronics group, is expected to launch new products at this year's Farnborough Air Show. The company has acquired a reputation for innovation in advanced technology, particularly for military applications. At Farnborough it is expected to show the so-called "mono-hud," or head-up display, for use in civil airliners. The technique has been used successfully in the military field for some time, and Marconi has produced head-up display systems for use in a number of U.S. aircraft.

The latest to use the Marconi display is the F-16, in quantity production for the U.S. and European air forces. The F-16 will use the HUDSIGHT unit and a new head-up display working with a HUD weapon aiming computer system taken from the American A-4M HUDWAC production line.

Ferranti is also in the forefront of British avionics developments on show at this year's Farnborough Air Show. The company has received the initial order from Panavia to produce the first 100 cockpit displays for the Tornado. These include a combined moving-map display with superimposed radar for the navigator and a moving-map display for the pilot.

One of the company's recent major successes was the award of a U.S. contract to supply its COMED 2035 moving map horizontal displays to McDonnell Douglas for the U.S. Navy A-18 Hornet strike/fighter. The work will be carried out with the Bendix Corporation of the U.S. which will work under licence from Ferranti. When the aircraft reaches the production phase, Ferranti is confident that this will bring a production contract for its moving map system worth up to $9.5m.

L.McL.

The U.S. National Aeronautics and Space Administration's Quiet Short-Haul Research Aircraft seen taking off on its maiden flight earlier this summer from Boeing Field in Seattle. This one-of-a-kind research aircraft is intended to demonstrate new methods of reducing the noise of modern airliners and of shortening their take-off and landing runs. Both improvements will be essential for new airliners of the future, especially those on "bus-stop" type air routes.

Well set for progress

UNITED STATES

THE U.S. aerospace industry is well set to build on the solid gains established last year when sales, profits and order books increased substantially. The considerable growth of airline traffic is helping to maintain a good order rate for commercial airliners, while general aviation business and military sales are also climbing steadily.

The industry's total sales last year amounted to a record \$32.3bn which, though welcome, was actually worth less after adjusting for inflation than in the peak years of the late 1960s. Nonetheless, last year's improvements were across the board and included all four major product groups—aircraft, missiles, space and non-aerospace products. Profitability was also better, with net profit after taxes as a percentage of sales increasing from 3.4 per cent to 4.2 per cent.

Most of the increase in the industry's order book from \$39.7bn to \$44.3bn was the result of commercial aircraft orders. Last year proved a bumper one for Boeing, McDonnell Douglas and Lockheed, which together pulled in 358 orders compared to 202 in 1976 and 132 in 1975. At the beginning of the year most analysts expected this order rate to slow down, largely because of an expected fall in demand for the world's most successful commercial aircraft, the Boeing 727. To some extent this expectation has proved correct as U.S. airlines complete replacement orders for their ageing 707s, and DC8s.

By late August Boeing had taken 71 orders for the 727, which is slightly below the rate of the previous two years. However, this had been more than offset by a hefty increase in orders for the 737 and 747 aircraft. Boeing has not booked more than 39 orders a year for the 737 since 1974 but by late August the tally stood at an impressive 69. The 747 is enjoying no less of a sales boom, with 60 orders swept in compared to a record 42 in the whole of last year.

Orders

Lockheed's L-1011 TriStar is also having a good year thanks to a round dozen order from Pan Am. By late August the company had taken 18 firm orders, which was more than in any year since 1973 and compared with just two last year.

The order rate at McDonnell Douglas is also running well ahead of last year. By the end of June the St. Louis-based company had orders for 28 DC-9 jets and 23 of the wide-bodied DC-10s. This was substantially above last year's first half figures, although it would still surprise many observers if McDonnell Douglas finished the year with more than last year's record 128 orders.

As a result of this strong demand, Boeing's order book at the end of June stood higher than at any time this decade, with 318 aircraft to be delivered. McDonnell Douglas, with 123 on order, had the highest backlog since 1973. But Lockheed was still far short of its best year, 1971, when it had orders for 104 aircraft and its total at the end of June amounted to a modest 31.

Mr. Alan Benasuli, aerospace analyst with Drexel Burnham Lambert, reckons that commercial aircraft revenues for the three companies together will top \$10bn in 1980 and that Boeing's profits from this sector may approach \$600m compared to an estimated \$150m in 1977. Meanwhile, commercial aircraft losses at McDonnell Douglas and Lockheed should, he says, begin to decline in 1979.

In contrast, however, it is generally acknowledged that the risks facing these companies are greater than they have been for several years. This is because the aerospace industry is entering a new phase of commercial aircraft development at a time when foreign competition is stiffer than it has been for ten years or more. Boeing is the company with the greatest exposure, but also take greatest potential reward. It is now offering three new aircraft incorporating advanced wing technology, increased use of light-weight materials and high by-pass ratio jet engines.

Most attention has focused recently on the 767 whose launch was confirmed in July by an order for 30 aircraft from United Airlines. This is a twin-engined wide-bodied aircraft with a range of 2,000 miles and seating 180-200 passengers in a seven abreast configuration. The 777 is a trijet version of the 767 with the same fuselage, but seating 225 passengers and a transcontinental range.

Third

The 757 is the third new model planned by Boeing and is a twin-engined narrow-bodied aircraft, seating 140 to 160 passengers, possibly using the same fuselage as the 727. Estimated launching costs of the 757 are between \$500m and \$1bn with possible first deliveries in 1983-84.

However, launch costs of the 767/777 family are thought to be close to \$3.5bn over the next five years and partially for this reason and partially to ensure a flow of orders from foreign airlines, Boeing has sought foreign participation in the project. A shared risks agreement was announced in August with the Italian state manufacturer, Aeritalia and this is expected to be followed by an agreement with prospective Japanese partners. Such agreements notwithstanding, Boeing could be called upon to bear between 75 and 80 per cent of the start up costs.

United's order for Boeing 767s coupled with Airbus Industrie's decision to develop the 200-seater A-310 version of the A-300 Airbus has led McDonnell Douglas to abandon its plans to proceed with its own version of this type of aircraft. But Lockheed has the Dash 400 version of the TriStar on the drawing board. Because of low incremental development costs—estimated at between \$50m and \$100m—the company may be tempted to try to win a small foothold in this market.

Assuming that Airbus and Boeing are the two major factors then it is thought that Boeing may capture two thirds of the available orders and the A-300/310 most of the remainder. However, competition between the two will cut into profit margins which means that Boeing is unlikely to gain the 20 per cent or more which is thought to be the yield from the extraordinary 727 programme.

John Wyles

Business aircraft a growing fleet

THE USE of small transport aircraft for business and executive travel is now expanding rapidly throughout the Western world, as companies and their executives come increasingly to appreciate the greater comfort, convenience and cost savings that this form of communications can give them compared with normal scheduled air transport. In Britain, particularly, the demand for both jet and propeller-driven aircraft for use by executives is expanding, and all the signs are that a healthy demand will prevail for some time to come.

"Business aviation" is part of the broader field of "general aviation," which involves all types of flying outside the public-service transport operations conducted by the scheduled and charter airlines. Thus, general aviation includes not only business aviation, but also private, leisure and sporting flying, gliding, and such other aeronautical activities as "hang-gliding" and ballooning. But business aviation is one of the most rapidly expanding areas of general aviation, which in itself is now growing rapidly. According to recent research by Frost and Sullivan, market research analysts, spending by companies and individuals on over 20,000 general aviation aircraft during the next decade is likely to top £1bn.

While in the period immediately following the oil crisis of late 1973 and the subsequent industrial depression there was a slackening in demand for air transport, business aviation remained one of the stronger elements in aviation; and recovered much more quickly, especially in the U.S. In the UK, the recovery was slower, but is now very strong, and in the first six months of last year 67 general aviation aircraft were sold compared with 83 in the whole of 1976.

All the evidence from aircraft manufacturers and representatives of general aviation operators suggests that this improvement is likely to continue.

One of the most quoted advantages of the business aircraft is the freedom it can give to executives who cannot afford to waste time in waiting for conventional, scheduled airline services, and wish to avoid the problems involved in transport from airports to perhaps widely scattered factories or offices.

Whereas the scheduled airlines are served by 38 airports in Britain, there are a further 400 or so airstrips and airfields used solely by general aviation aircraft.

In addition, throughout Western Europe, there are many hundreds of similar small airstrips or local airfields that are available for business aviation, many of them having customs facilities laid on or available at short notice. If a helicopter is used in place of a fixed-wing aircraft, this operational flexibility is considerably enhanced, stemming from the ability to land and take-off vertically—often from confined spaces that no fixed-wing aircraft, however small, could negotiate.

Morale

It is really this operational flexibility, of the business aircraft or helicopter which, when translated into time saved, is accounting for the growing success of this branch of aviation. Allied to the direct savings in cost and convenience is the less-quantifiable but nonetheless significant morale factor in that a busy and much travelled executive spends less time away from home when he has the use of a company aircraft than when he is obliged to use the conventional scheduled services of the public-transport airlines.

British Aerospace, which manufactures the successful 125 business jet, estimates that there are over 1,000 business jets in service around the world. A small number have been bought by rich individuals for their exclusive, personal use, but the vast majority have been bought by companies after detailed evaluation of operating economics and other likely benefits.

For a business jet to be a successful purchase or lease, a potential user would typically need to travel extensively throughout the year. The purchasing company or executive would also need to demonstrate that the operation of a business jet could give a useful saving of time over commercial methods of transport and could provide benefits to the whole company, and not just to one or two executives. The business aircraft must be a tool of management and not a "chairman's toy."

In assessing the costs of buying and flying a business aircraft, a company must include depreciation; insurance for the airframe and for passengers and third parties; hanger charges; crew salaries and expenses; maintenance; fuel and oil, and landing fees.

Against these must be set the need for a greater number of overnight stays if the executive had been obliged to use scheduled airlines, with reduced flexibility and greater total travelling time.

The most extensive use of business aircraft is to be found in the U.S., where the leading 1,000 companies alone now operate over 1,360 aircraft, of which 550 are business jets. In Britain, where development has been slower, the Business Aircraft Users' Association has 57 corporate members, which own 112 business aircraft, 42 of which are jets.

The Association believes that interest in business flying is here to stay; and unlikely to fall suddenly, unless there is a dramatic downturn in business fortunes—when the company aircraft is often the first item to be cut. Occasionally the cutting-out of the aircraft and its expenses, however, is little more than a gesture, for companies have been known to sell an aircraft one day and lease it back from its new owners the next.

The cost benefits, however, can be considerable, as the General Aviation Manufacturers and Traders Association has pointed out. The Association has estimated that on a direct comparison, the seat mile cost of a European scheduled airline and an air taxi, hired for a specific occasion or for a period lease, with a full load of passengers, can show a saving of up to 25 per cent in favour of the air taxi.

Lynton McLain

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New ring of confidence

FRANCE

THERE IS beginning to be a new ring of confidence about the French aerospace industry. The two sour episodes of the past couple of years are behind it: the defeat of the Dassault Mirage in the "Arms Deal of the Century" against American competition to supply fighter aircraft to Norway, Denmark, Holland and Belgium; and the long guerrilla war to gain acceptance for Concorde in the U.S.

Instead, the French now think they have a series of winners in the international battle for markets. Since the turn of the year the orders for the Airbus have doubled making it possible for the French to claim that they will pass the minimum break-even point of sales, and a new version of the Airbus is to be developed. In the military sphere the Franco-German Alpha-Jet trainer is selling substantially and an agreement has just been signed with Lockheed under which the U.S. company will sponsor the Alpha-Jet in the competition to find a replacement trainer for the U.S. Navy. Still in the military area the prototype of the latest Dassault Mirage, the 2000, is flying while in the helicopter sphere Aérospatiale, the State-owned concern, now ranks as a substantial world producer. With its three basic versions of the Falcon, Dassault has also made its presence felt in the market for business jets.

There remain, of course, deep uncertainties. The foremost of them is whether the aim of developing a full family of aircraft around the Airbus consortium can be realised. While the go-ahead for the 200-seater 310 version of the Airbus has been received there seems much more doubt about whether a European competitor in the 136-160 seat class of aircraft can be justified commercially, with or without British participation. Essentially tripartite discussions between the British, French and Germans on such a project, the JET or Joint European Transport, have been going on for more than a year, but the project still seems a long way from jelling.

In part this is because of the difficulty of defining a commercial target for the aircraft. With a 136-seat capacity the proposed smaller version of the JET would be in competition with the existing and strong-selling Boeing 737. As the aircraft goes up in size it bumps up against, in turn, the existing 727, the projected Boeing 757, and eventually the Airbus itself as well as the McDonnell-Douglas project for an Advanced Technology Medium Range design.

In the second place the JET has always been designed around only one type of engine, the Franco-American CFM-56, which is a civilian derivative of the General Electric engine intended for the B-1 bomber.

The only company to show positive interest in the JET is Air France: it was authorised to lease 13 Boeing 737s to replace its Caravelles on condition that it became the launch airline for the JET. At the time of writing, both parts of this scenario are foggy since the company's pilots are refusing to operate the 737 with two men "up front" rather than three and the company is refusing to order the aircraft until it is assured of two-man operation. As a result it is in danger of losing its place in the delivery queue.

There is relatively little development in the French aerospace sector which is not shared with other European countries. The Mirage 2000 is the only big unilateral venture, partly because Dassault is, by tradition, a company intensely proud of its know-how and notably "unclubable" and partly because the company is crucial to the maintenance of an independent defence strategy.

Pride of place in collaborative ventures must go to the Airbus. Total orders stand at 108 and options at 53, including orders and options for the 310. Seventeen companies have now acquired the Airbus and, extrapolating from existing orders, the consortium calculates that sales of around 300 machines are probable, and if the order for 23 B-4s from Eastern Airlines and its option for 25 310s are included the total reaches 350. This would make the Airbus a more successful venture, in sheer numbers sold, than the Caravelle, which the French tend to regard as the great post-war missed opportunity in the same way as the British regret the failure of the Comet to capitalise on its technological advance.

The question of British participation in the 310 is not essential. British Aerospace will continue to make the wings for the B-2 and B-4 versions and, if there is British participation in the consortium, will undoubtedly make the new wing for the 310 as well. If not, outline contracts exist for other suppliers.

Doubt

The big doubt over the Airbus is still its ability to sell competitively in the U.S. The two recent large European successes in the U.S.—that of the purchase of the Airbus by Eastern and Pan American's decision to order the long-range TriStar with Rolls-Royce engines—both owe at least something to the provision by the Europeans of cut-price financing which has raised protests from U.S. manufacturers. United finally opted for the Boeing 767 rather than the Airbus, and it is clear that every order gleaned from the U.S. will be a hard struggle, commercially, financially and politically.

The other success story in the civil aircraft field is that of Dassault's Falcon series of business jets. The new tri-engined Falcon 50 which exists in several prototypes has more than 70 orders to its credit while the Falcon 20, which is twin-engined, last year pulled off the order for the American coastguards. With some 700 business jets sold, Dassault is compensated for its ill-fated Mercure airliner, of which a handful are operated by a single company, Air Inter.

In the military area again most ventures are co-operative. The Alpha-Jet is a joint Dassault-Dornier venture and the Jaguar, which has been seeing service in France's intervention in Africa, is a British Aerospace - Dassault Breguet (originally Breguet) venture though it is marketed by the two countries in competition. The Transall military transport, which again has been used to airlift troops to Africa, is Franco-German and production lines have recently been re-opened to try to maintain the workforce at Aérospatiale's plants at Toulouse where the Concorde series is coming to an end. Aérospatiale's new Fouga-90 twin-engined trainer has just flown for the first time—an example of a unilateral venture—but about a quarter of Aérospatiale's turnover in missiles is accounted for by its joint Euromissile venture with MBB of Germany whose products include Milan, Roland and HOT.

Although the existing series of Mirages have far from reached the end of the road the company is investing much effort and hope in the 2000, a return to the delta-wing design of earlier Mirages. The French are intending to acquire some 400 of the 2000 in single and twin-seater versions while the company plan is developing a twin engined derivative christened the 4000. The engine manufacturer Snecma, which is State-owned, has developed the M-53 engine for the new Mirage, and with the CFM-56 still looking for a home its health depends significantly on the ability of the new Mirage to follow its predecessors onto the export market. Certainly, if the U.S. Administration, present or future, takes a much more discriminating view of exports of high technology weapons there will be a lot of pressure on the French to fill the gap with the new Mirage.

The success of the 2000, together with the continuing sales of the Mirage F1, is also important to Aérospatiale, which is a leading sub-contractor to Dassault for the Mirage series as well as the Falcon. The build-up of production of these aircraft, together with the higher rhythm of output of the Airbus, the re-launch of the Transall transport and its helicopter work are necessary to guarantee employment at Aérospatiale which for years had both the Airbus and the Concorde on its hands when neither was selling.

Last year the French industry booked almost FFr 24bn in firm orders of which a half was for complete aircraft and airframes. Dassault itself booked some FFr 10.7bn export orders last year of which some FFr 8bn was military.

On the structural side the Government is still working out the methods of its acquisition of a blocking minority of one third in Dassault, though it has now got its own men on the Board. It felt that Dassault's role was so pivotal to the French industry (though it only employs 15,000 of the 108,000 in the sector) that the closer co-ordination it felt was necessary could not come about without the exercise of control.

The French aerospace industry at the moment presents a mixed profile. The strand of unilateral development is still important: the theme of European co-operation is very much at the forefront of French conceptions: but, because of the importance of the U.S. market and the need to maintain the country's technology at competitive levels, the motif of co-operation with the U.S. is certainly present. It is with this diversified policy that French aerospace will go into the vital 1980s.

David Curry

An A-300 Airbus in service with Eastern Airlines of the U.S. The Airbus is now attracting an increasing number of airline customers throughout the world, and firm orders and options stand at over 150 aircraft.

Partnership the keynote

W. GERMANY

FOR THE West German aerospace industry, the past 12 months have been decisive in setting out the path it is likely to take in the next few years, without so far pushing it very far down that path. Several of the big decisions that had been pending have been taken—the rueful abandonment of the VFW-614, the exhilarating launch of the smaller A-310 version of the European Airbus, and not least, the resolution of the industry's future structure.

In very broad terms, the West German aerospace and the Government in Bonn agree that the future lies in strengthening European aerospace co-operation. Already, the West German industry is involved in all the major European consortia companies—Airbus Industrie, the Panavia group building the Tornado Multi-role Combat Aircraft, Euro-missile, and the newest international grouping which will develop a generation of advanced military helicopters for the mid-1980s. What is true for the West German airframe manufacturers is even more relevant to the engine companies, likewise deeply committed to international co-operative programmes.

West Germany's absolute faith in partnership among European countries is different in one important respect from that of its principal associate, France, in that there is little of the strident chauvinism still to be heard in Paris and directed mainly at the U.S. That is not to say that German officials do not ultimately regard the development of a truly European industry as a political goal they do. But they do not want to pursue it except on terms that make business sense.

Pitfalls

During the talks this past summer on whether or not Britain rejoins the Airbus group, West Germany's voice has been persistent in pointing out what Bonn sees as the longer term commercial pitfalls for Britain of "going Boeing." And in appealing to London to rejoin the Europeans, it has stressed its own need to be convinced by the manufacturers that the 310 project would be a sales success, before it would commit funds. Had the 310 not won an impressive array of launching orders in July, from airlines known for their independence from governmental interference (including Lufthansa), it is not certain that the German government would have lobbied London so hard. As it is, Bonn has quietly dissociated itself from the Airbus consortium manufacturers' claim that joining in the 310 programme must also mean Britain's signing up now to help develop the smaller Joint European Transport narrow-bodied jet projects. Herr Martin Gruener, the Economics Ministry State Secretary, who is the official "co-ordinator" for the industry, is quite simply not yet convinced that either of the proposed jet aircraft would find a market. He would prefer to concentrate limited resources on what has the best chance of success.

In the German Government's view, the case for the entire Airbus project, in all its variants, has been won in the market place. That, German officials believe, is what has made the U.S. manufacturers in the past year or two so much more interested in seeking co-operative deals with Europe in the civil sector of the industry, even though the European share of the world airliner market remains relatively modest. Bonn is not against co-operation with the Americans, but it does mean to make sure that Europe is not merely used by the U.S. giants as a subcontractor without design leadership or responsibility of its own. That is exactly what the Germans fear might result from deals such as Boeing's offer to Britain.

Military co-operation with the U.S. is a very different matter. Here, the German Government is keenly interested in seeing a reality made out of President Carter's promise of a "two-way street," and in making real progress towards joint development and procurement for NATO. An immediate issue is that of a version of the Airborne Warning And Control System (AWACS) for the European allies. A German consortium headed by the privately-owned Dornier company is ready to go ahead with the complex avionics and instrumentation of the aircraft as soon as a political decision on costs is finally reached.

Similarly, German manufacturers are already involved in exploratory talks on designs for the advanced tactical fighter aircraft which NATO will require at the end of the next decade, and they are keen to make this as much a trans-Atlantic as an inter-European venture. The biggest of the West German aerospace companies, Messerschmitt-Boelkow-Blohm, has already signed an agreement on joint development of the new technologies that such an aircraft will require with McDonnell Douglas.

Further evidence that, technically, Europe has much to offer in such a partnership has come from the multinational Spacelab consortium, in which a complete orbital laboratory for use with the U.S. Space Shuttle has been developed in Europe with co-ordination by ERNO, a subsidiary of the German — Dutch Vereinigte Flugtechnische Werke—Fokker group. The future of the consortium, and of an enduring European contribution towards America's manned space flight programme appears, however, less than certain once the initial Spacelab missions (which will include European astronauts) have been completed.

With the two main military programmes, the German-British-Italian Tornado and the German-French Alpha Jet, now in full production and the European Airbus ringing up a steady flow of orders for the 310 and for the B-2 and B-4 types, the work prospects for the West German aerospace no longer look as bleak as they did a year ago. There is even intermittent talk of the possibility of capacity being expanded. If the Airbus programme picks up to the point where output might be raised to four aircraft a month; why not then have a second production line, and why not in Germany?

MBB and VFW-Fokker, the two German partners in Airbus Industrie (via the holding company Deutsche Airbus), are very careful to play down such suggestions. There are likely to be no strategic decisions of this sort before the outstanding domestic problem of the industry is resolved—when, and on what terms, these two companies merge. Talk of a merger, that would give the German aerospace industry a "single voice" comparable to British Aerospace, or to the French industry, has been consistent yet inconclusive for several years. Herr Gruener, for the Government, has been attempting to push the two companies into it, yet he has lacked the power to force their hands.

Last December, Herr Gruener acquired a more direct lever on the situation when he brought State aid to the rescue of VFW-Fokker, in severe difficulties after it had been obliged to shut down the commercially unsuccessful VFW-614 short-haul jet airliner programme. Serious merger discussions with MBB were made a condition of Bonn's rescue operation. Yet these have still come to nothing concrete. MBB suffered a heavy blow when its new chairman, Herr Helmut Langfelder, heir to Herr Ludwig Boelkow, was tragically killed in a helicopter crash. On the VFW-Fokker side, there was indignation at the condescending terms offered by MBB, and continuing uncertainty about how the Dutch interests should be financially protected, and how the cross-frontier integration achieved by the group might be preserved where possible.

Strengthen

Once again, VFW-Fokker may be able to strengthen its hand as the flow of work for the Airbus programme builds up. Moreover, the German VFW factories also stand to gain from any further sales advances by the Fokker-designed F-27 and F-28 airliners and from subcontracting on the Tornado. Yet it seems unlikely that the German-Dutch group, hailed at its creation as a pioneering multinational merger, can maintain its independence indefinitely or do more than strike a slightly better deal for its shareholders. To that extent, time may be on its side.

MBB, in addition to filling the void in its top management, needs to resolve a tussle going on among its shareholders that has, at times, set the two state governments of Hamburg and Bavaria (which hold some 40 per cent between them) at odds with the big industrial companies that own the remainder. The two state governments, concerned about jobs, evidently mean to hang on to their holdings long enough to have a direct say in how the inevitable rationalisation is carried out—the ultimate purpose of the merger with VFW-Fokker, as Herr Gruener and the Federal Government see it. As a first step towards shaking out MBB's capital structure, however, Boeing has sold its 12 per cent stake to Siemens, the electrical giant, which in turn is hoping to sell it to an industrial consortium.

It remains to be seen whether a merged MBB-VFW group, perhaps also drawing in Fokker, would be able to bite the bullet of painful closures of smaller works and rationalisation of a workforce that, at around 50,000, is smaller than the British or French industry yet still probably too big. Dornier, the third company in the industry, is firmly resolved to keep its independence and, with the Alpha-Jet and a number of profitable smaller programmes, it can probably afford to.

Adrian Dicks

The armoury hides its power

SOVIET UNION

THE SOVIET aerospace industry is not only one of the two largest in the world, matching that of the U.S. in size and scope, but also one of the most secretive. Virtually no details or statistics of its locations, its total labour force, its volume of output and its plans and prospects are published in the way the the aerospace industries of the West reveal themselves.

But its sheer size is indicated by the fact that Soviet civil and military aviation remains largely self-sufficient, with virtually no imports beyond a small quantity of high-technology specialist equipment and an occasional interest shown in some specialist areas of Western aerospace development, such as advanced aero-engines.

At the same time, the industry suports an airline the size of Aeroflot (which last year carried more than 100m passengers, and which in the five years from 1976 to 1980 is expected to carry no less than 550m, a rise of 30 per cent over the 1971-75 five-year plan goal), while it also keeps an air force supplied with a vast array of different aircraft ranging from small helicopters to the most advanced supersonic combat machines such as MiG-25 Foxbat and the Sukhoi Su-19 Fencer Supersonic attack aircraft now being seen increasingly on the NATO / Warsaw Pact borders in central Europe.

Visits to Soviet aerospace facilities by Western journalists are firmly discouraged, and only a few visiting dignitaries such as Heads of State or Ministers involved in aerospace affairs have been allowed to see Soviet civil aircraft production, while military production plants remain a closed book to the West.

But for all this secrecy the West has been able to learn a great deal about Soviet aviation in recent years—and especially about its civil capabilities—from the aircraft that have been permitted to visit foreign air displays such as those in Paris Hanover, in bids to promote foreign sales, and on the military side from occasional defections, such as that by a Soviet MiG-25 Foxbat pilot, Lt. Viktor Belenko, to Japan two years ago with his aircraft.

Information thus obtained indicates that while the Soviet aerospace industry may from time to time adopt comparatively simple solutions to some advanced technological problems, the quality of research, design, development and production remains exceptionally high, and all those in the West who have had any kind of access at all to Soviet aerospace—for example, the U.S. scientists involved in recent joint U.S.-Soviet space activities — are under no delusions as to the competence or quality of Soviet engineers, designers and scientists.

Famous

Broadly, the Soviet aerospace industry is based on ten basic "design bureaux," originally founded by, and in some cases still run by, some of the most famous names in world aviation.

In alphabetical order, these are: Antonov, specialising in transport aircraft and heavy long-range bombers and reconnaisance types; Berlev, involved with amphibious aircraft; Ilyushin, founded by the late Sergei Ilyushin, and also a transport aircraft design bureau; Kamov, specialising in helicopters of various types; MiG, founded by the late Colonel-General Artem I. Mikoyan, his partner Mikhail I. Gurevich, specialising in the famous line of MiG combat aircraft; Mil, founded by the late M. I. Mil, also a helicopter specialist with "heavy lift" capabilities; Miasischev, a bomber specialist, whose most significant development has been the long-range four-engined jet bomber known by its NATO code-name of Bison; Sukhoi, another famous combat aircraft specialist bureau, its latest product being the Sukhoi Su-19 Fencer variable-geometry attack aircraft; Tupolev, both a transport aircraft and a bomber specialist, whose most famous product to date has been the TU-144 supersonic airliner, the so-called "Concordski" because of its design similarities to the Anglo-French Concorde supersonic airliner; and Yakovlev, a versatile design bureau which has produced not only all-weather fighters, basic trainers and helicopters, but more recently also three-engined short-range transport aircraft, such as the Yak-40 and Yak-42.

That the Soviet aerospace industry is not without its design problems has been proved by the comparatively poor performance of the Tu-144 supersonic airliner. Although begun at about the same time as the Concorde, with the prototype flying a little in advance of the Anglo-French aircraft, the Tu-144 suffered a number of problems during development, not least the crash of the demonstration aircraft at the Paris Air Show in 1973 which delayed its entry into regular airline service, and although it is operating on a limited number of domestic air routes, the aircraft is still rarely seen outside the Soviet Union even on demonstration flights. Although eventually it is intended that it should operate regularly between Moscow and Havana, Cuba, the Far East and points in Africa, so far no such regular overseas services have been established.

Bigger

A more significant Soviet transport aircraft development has been the production of the Ilyushin IL-86 wide-bodied four-engined "airbus," given the NATO code-name Camber, and designed to carry up to about 250 passengers over short-to-medium ranges. Thus it is approximately comparable in performance to the European twin-engined A-300 Airbus. This is the biggest Soviet passenger transport aircraft in production, but while so far there are no reports of anything larger in prospect, there is little doubt that because of the vast distances in the Soviet Union, and the increasing volume of internal air travel, a need will eventually arise for a transport comparable to the U.S. Boeing 747.

Considerable significance also attaches to such other Soviet transport aircraft developments as the Tupolev Tu-154 three-engined medium-to-long range airliner, and the more recently developed Yakovlev Yak-42 three-engined short-range transport. Well over 100 Tu-154s are in service with Aeroflot, and others are in use by various

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Long-term promise of the Boeing deal

ITALY

ITALY HAS just fulfilled its wildest ambitions in the civil aviation field. After some seven years of discussions and stop-go negotiations, agreement was finally reached this month between the giant Seattle Boeing group and Aeritalia, Italy's State aerospace company, which will see Aeritalia participate on a risk-sharing basis in Boeing's 767 programme for the construction of a new medium-range passenger airliner.

In many respects, the deal, which will give Aeritalia a share ofg some 15 per cent, valued at about $2bn in the new Boeing project, is expected to dictate in large measure the future shape of the Italian aerospace industry. In the next five years the weight of civil aerospace is now likely to increase substantially in Italy, gradually eroding the dominance so far of military production.

Merger

For the past decade or so, since the creation of Aeritalia through the merger of the non-engine aerospace activities of the private Fiat group and the aerospace sector of the IRI-Finmeccanica State holding in 1969, to give Italy a national areospace industry capable of participating in international joint ventures, the emphasis has focused essentially on military production. Indeed military aircraft currently account for as much as three quarters of Italy's overall aerospace turnover, which last year totalled L740bn (about £450m), representing a 4.2 per cent increase in real terms over the previous year.

This overdependence on military sales has proved a severe handicap to the development of Italy's national aerospace industry, and is forcefully reflected in the L20bn losses reported by Aeritalia last year and the group's constantly rising indebtedness. The absence of an adequate Government aerospace policy, and in particular the absence of the sort of financial backing required for the development of a national aerospace industry, have been serious obstacles to growth.

The low level of defence spending has exacerbated the industry's problems even further. Defence expenditure in Italy last year, according to the International Institute for Strategic Studies, amounted to some $4.4bn—or the equivalent of 2.6 per cent of Gross Domestic Product—the great part of which was eaten up in wages, salaries, and current expenditure of all kinds. At the same time the Italian Air Force, the single biggest customer, accounting for about 70 per cent of Aeritalia's sales, is notorious for deferring payments which, as a result of the disastrous bureaucracy, can take up to 24 months to settle, forcing the aerospace industry further into debt.

The absence of a comprehensive defence programme has forced the industry to look elsewhere, to export markets. But until recently the lack of Government export support and the reliance on predominantly U.S. engine licences has severely limited overseas sales. Last year, exports totalled L330bn and represented a drop of 7 per cent in real terms over the previous year.

Aeritalia's G-222 military transport aircraft is a case in point. It is currently fitted with General Electric T64 engines; but a U.S. embargo has blocked a sale valued at an estimated $400m of some 20 G-222 aircraft to Libya. The Italian industry has long suspected that U.S. embargoes are not wholly motivated by security reasons, but also by more mundane commercial considerations, especially since the G-222 is a rival of sorts to the larger Lockheed Hercules transport aircraft—itself the subject of a notoriously controversial sale to the Italian Air Force.

Aeritalia, however, is now hoping to get round the embargo by fitting the heavier Rolls-Royce Tyne engine on the G-222 by next year. Negotiations with Rolls-Royce are understood to be at an advanced stage.

Against this general background it is not altogether surprising that the national aerospace industry in Italy has sought for some tmie to achieve a better balance of its productive activities by reducing the weight of the military sector on overall turnover. With the Boeing programme, in which Aeritalia will be responsible for most of the moving parts of the new 767's wings as well as the delicate radome or nose cone, and with the continuing construction of McDonnell Douglas DC-9 and DC-10 body panels and tail units, Aeritalia eventually hopes to see its activities more evenly distributed by the mid-1980s between military and civil production.

Sig. Giuseppe Petrilli, the chairman of the giant IRI State holding company, said the Boeing deal, which will directly generate some 1,000 new jobs in the depressed South of Italy, would neable Aeritalia to build up a significant presence in the medium term in the civil aviation market. Under the terms of the agreement with Boeing, Aeritalia will manufacture the wing control surfaces of the new medium range passenger aircraft, the wing trailing edge flaps and leading edge slats, wing-tips, elevators, the vertical tail rubber and the radome. Moreover, Aeritalia personnel will take part in the overall engineering programme of the new aircraft.

Meanwhile military production remains Aeritalia's mainstay. The Italian company in the shorter term is pointing particularly to its participation with British Aerospace and he West German Messerschmidt group in the Panavia programme for the construction of a multi-role, variable-geometry supersonic aircraft, the Tornado MRCA. Aeritalia will manufacture the wings of the 809 aircraft to be built for the Air Forces of the three countries, and it will assemble directly and test fly the 100 aircraft to be delivered to the Italian Air Force.

Approval

Parliamentary approval of the L1,265bn (about £850m) modernisation programme for the Air Force has given the Italian industry some breathing space, especially since in the Tornado programme some 100 other Italian companies are participating in one way or other with Aeritalia. Together with the G-222 military transport aircraft, Aeritalia also produces, among others, the G91Y twin-engine single-seater tactical fighter-bomber and the F104S fighter equipped with an integrated air-to-air Sparrow missile weapon system.

In the space sector, Aeritalia currently participates in a number of international space projects. Among them is the Spacelab programme. Aeritalia operates within the framework of a consortium headed by the German ERNO-VFW Fokker group and its space engineering sector designed the module's structure as well as the thermal control system.

But Aeritalia, which employs more than 10,000 of the 32,000 people working in the Italian aerospace industry, is only one aspect of the country's aerospace sector. At the other end of the scale there are a host of smaller concerns both in the public and private sectors. Unlike Aeritalia, however, they tend to specialise in a specific range of products and have the characteristics of Italian medium-sibe enterprise in their flexibility, market aggressiveness and general profitability.

A field in which these relatively smaller concerns continue to do well, especially in export markets, is that of helicopters. One of the most active companies in this sector is the Agusta group which has won sizeable orders both for helicopters like the Augusta 109, designed specifically for civilian rather than military use. Other active concerns are Aermacchi and Piaggio. Aermacchi is now working on its new MB-339 trainer-fighter to replace its successful MB-326, while Piaggio has updated its standard P-166 light transport aircraft.

None the less, the focal point of the Italian aorespace industry remains Aeritalia. It is the instrument with which the authorities intend to ensure the overall long-term development of the Italian aerospace sector on an international level. The State aerospace group, for its part, is now looking towards the recent collaboration agreement iwth Boeing in the civil aviation field and to the Tornado MRCA programme on the military side to build up a substantial presence in the international market.

The political awareness of the importance of the aerospace industry, alongside electronics and nuclar engineering, for a country like Italy is certainly there. The big question is whether this awareness can be put into practice and if the aeropsace industry will at long lust be given the adequate support which it has so far chronically lacked.

Paul Betts

Long debate over a new fighter

ISRAEL

ISRAEL'S AEROSPACE effort, which underwent dramatic growth in the past decade, is currently marking time while the politicians debate whether to approve the development of a new fighter for the 1980s.

The industry is equally anxious about the prospects of export orders for the Mach 2.3 Kfir combat fighter. After the Americans vetoed sales to South America, hopes hinged on Austria and Taiwan, which showed serious interest but are dragging their heels because of the political implications.

It was politics which created the aerospace industry in Israel and war which gave it the impetus that pushed it into the front rank of the small producers.

Aviation and aerospace basically means one company, Israel Aircraft Industries (IAI), which employs 20,000 people making civil and military aircraft, missiles, radar, communications equipment and a host of interrelated and peripheral items.

Created 25 years ago as a maintenance shop, the past decade has seen it flower into the country's largest military industrial complex meeting a wide range of domestic needs as well as capturing a growing export market.

The success of IAI has fed dozens of smaller plants, some of which have moved from subcontracting to independent production. In the past year the Government has begun to speak in terms of an aerospace industry and the Export Institute now has a special section actively engaged in promoting aerospace products abroad.

Pride of place goes to the Kfir, or Lion Cub, which has been combat proven in the 1973 Middle East war and is expected to play an important role in the Israel Air Force well into the 1980s.

It was President De Gaulle's arms embargo during and after the 1967 war which convinced Israel that it needed its own combat aircraft. Combining a Mirage body with a General Electric engine, the men at IAI refined and adapted the hybrid until they today argue that the Kfir is essentially a new creation.

However, it was that American powerpack thrusting the jet to supersonic speeds which also grounded the high hopes for major export orders from South America. Ecuador placed an order for 24 aircraft, but Washington, voicing apprehension about its effect on the military balance in South America, vetoed the sale. Other interested Latin American States now look elsewhere.

President Carter recently gave clearance for the sale of 48 aircraft to Taiwan, an order believed worth $500m, but the Taiwanese appear to have been intimidated by all the publicity which surrounded the deal. IAI has not given up hope that the deal will materialise, but is not banking on it.

Reluctant

Austria has postponed its decision on an order for 24 aircraft for a year. IAI claims its price was considerably lower than that of the Swedish Viggen, the main competitor for Vienna's attention, but say privately that Austria's Chancellor Bruno Kreisky is reluctant to give such a handsome order to a country of whose foreign policies he is so critical.

The disappointment over the failure to win export orders derives not only from the loss of the money which could have pushed the Kfir project into profitability, but also because that money might have made it easier to persuade the Government to approve the plans for a second generation "fighter of the 80s."

The company's designers have already made some detailed plans for the new aircraft, but Government approval is needed for the $500m-$600m outlay to produce a prototype of the aircraft which has already been provisionally dubbed the Aryeh, or Lion.

The high costs and high risks involved in such a venture has made the Government hesitate for three years. Some fear the delay already means that the proposed advanced fighter-bomber could be obsolete by the time it come off the drawing board.

Others are doubtful that Israel has the capacity to create its own original aircraft. It is one thing to build an aircraft based on the stolen blueprints of a proven type like the Mirage, and quite another to do it all unaided.

Mr. Zvi Alon, long-time head of procurement and production at the Defence Ministry, bluntly states that "a small country has to buy the know-how. All the research and development resources in Israel would not be enough to develop such an aircraft from scratch."

Because of fears that the Aryeh would not get the green light, and because of the lack of Kfir exports, IAI tried to get a share in producing the U.S. General Dynamics' F-16 fighter which has been promised to the Israel Air Force. General Dynamics opposed any production deal because it fears IAI would apply the technology to go into competition.

The success abroad of other Israeli products which incorporated U.S. technology created this fear. The Shafrir air-to-air missile produced by Rafael, the Defence Ministry's armament development authority, led to charges by the Americans that it was a copy of the Sidewinder missile which subsequently competed for the same markets. The Defence Ministry has denied this charge, but American producers' fears do not appear to have been allayed.

But while the combat aircraft is the showpiece of the industry, IAI is far from being a one-product company. Budgeted output this year is I£9.2bn (approximately $613m) including some I£8bn (approximately $535m) in actual deliveries.

Without a single overseas sale of the Kfir, IAI exported $145m worth of its products last year, and is forecasting $250m export sales this year. Total export orders on the books top $400m. The company asserts that its products are today in use in 43 countries, and that it runs training courses in eight languages for its customers' personnel.

The single most successful export item is the Gabriel sea-to-sea missile for which overseas sales and orders now total $330m. The Israel Navy used the Gabriel to sink 13 Soviet-made missile boats in the 1973 war, and it is now being promoted as "the free world's only combat-proven sea-to-sea missile."

Healthy export sales have also been achieved by the company's two other aircraft, the Westwind executive jet and the Arava STOL transport.

The Westwind was developed from the Jet Commander purchased lock, stock and barrel from an American company in the late 1960s. After selling 50 of the original aircraft, IAI modified and improved it to create the Westwind, of which 88 aircraft have been sold, mainly in the highly competitive North American market.

The Arava got off to a shaky start when production commenced in 1970 but subsequently has notched up 60 sales, mostly to South America. This aircraft has yet to pass the break-even point but IAI says that with the current encouraging sales indications it could run into profit within two or three years.

Surprising

Other export items range from radars to electronic fences and include surprising items like the 65 foot Dubur patrol boat and the RBY light armoured reconnaisance vehicle.

The progenitor of IAI was its Bedek maintenance division founded in 1953 and enjoying a steady if unspectacular growth until 1970. Being outstripped by the rapidly expanding manufacturing division, Bedek received a major boost in the early 1970s when it started refurbishing Boeing 707s and 720s. Today there are 36 Bedek-refurbished Boeings of all types flying around the world. The division also provides maintenance for Boeing aircraft of 18 airlines, though not for El Al, Israel's national carrier which has resisted all blandishments to close its own maintenance department and hand over the work to Bedek.

Helicopter overhaul is a growing part of Bedek's work and it is planning to open a new plant to overhaul helicopter engines. There appears to have been little progress on the proposal for Israel to manufacture its own helicopter, but if there is Bedek will be able to supply trained manpower.

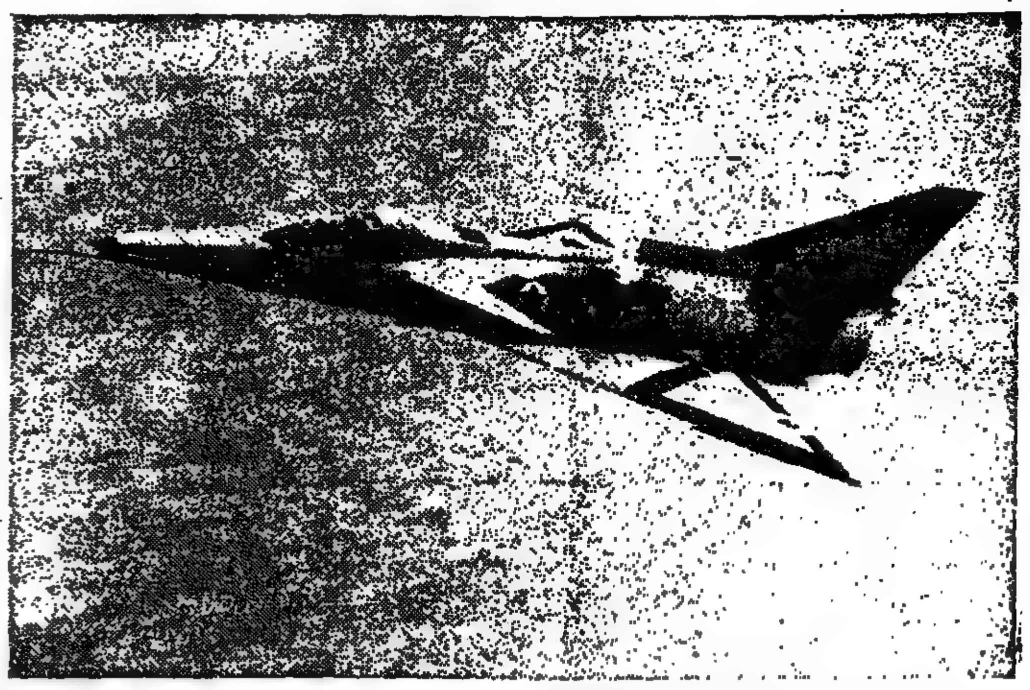
The high pace of local military demand for the products of the aerospace industry which followed both the 1967 and 1973 wars has been slowing down as needs are being filled. In order to prevent recession in the industry major efforts are now underway to find export markets for military products, and to develop items for the civilian market.

Mr. Uri Segev, head of the Export Institute's aerospace section, admits that this is a formidable task, especially as the civilian market is mainly in North America and Europe where there are plenty of domestic producers. But he believes that there is room for highly specialised Israeli products being produced at less cost because of the lower price of labour while meeting the most stringent international standards.

One encouraging development he sees is the growing involvement of major non-governmental companies like the giant Koor conglomerate and Clal investments in the aerospace field. With their resources more money will be available for the research and development needed to capitalise on the skills which grew out of the country's military needs.

The prospect of peace in the Middle East has made the industry more aware of the need to export, and even if the goal of a 50-50 balance between military and civilian exports is still a dream, there are few in Israel who doubt that it will be closer if further wars in the region can be avoided.

David Lennon



Israel's Kfir fighter, whose proven combat ability held out hopes of useful export sales. But results have so far been disappointing.

Soviet

CONTINUED FROM PREVIOUS PAGE

airlines in the Eastern bloc. This aircraft is thus one of the mainstays of Soviet civil aviation, and is still in production in various versions.

The Yak-42, seating up to 100 passengers, has been designed by the Yakovlev bureau with the aim of providing a simple, reliable and cheap aircraft for local-service use in remote areas of the Soviet Union in widely differing climatic conditions. It has been said that up to 2,000 of this type of aircraft are needed, especially in the Siberian and Far Eastern regions. It is thus likely to be one of the mainstays of Soviet civil air transport for many years to come, and can be expected to be developed into many different versions.

On the military side, very little detailed information is available as to the volume of production but it is believed to amount to about 1,800 aircraft a year of all types. Certain basic types of combat aircraft, such as the Mig-25 Foxbat, are known to be in quantity production, with a variety of versions already known to the West, including the latest Foxbat-D. More attention is currently being given, however, to the Sukhoi Su-19 Fencer, a "swinging-wings" attack aircraft which is being seen in increasing numbers in the central European region of NATO.

On the bomber side NATO is especially concerned with the Tupolev Backfire, a swinging-wings supersonic aircraft with very long range—estimated at over 5,000 miles—which makes it a formidable addition to the Soviet military inventory, capable of flying out into the North Atlantic and attacking Britain and Europe "through the back door." Unconfirmed reports have suggested that by early this year, more than 100 Backfire bombers had been delivered to the Soviet Air Force and Navy, with production continuing at a rate of about 30 aircraft a year, with an eventual force of anything between 250 and 400 aircraft believed to be planned.

Service chiefs in both the U.S. and Britain have paid tribute to the potential dangers presented by Backfire, which in their view could become an even greater menace to allied shipping in time of war than the large and growing Soviet submarine force. It is largely to counter the Backfire that the UK is buying the Air Defence Variant of the Tornado multi-role combat aircraft, which will itself be capable of intercepting at great height and at supersonic speeds any infiltrating enemy aircraft far out over the North Atlantic.

Looking to the future, little is known of current Soviet intentions in both the civil and military fields, but past experience indicates that while costs are perhaps less of a problem in the Soviet defence arena than they are in the West, the increasing complexities of modern aerospace technology are such that an evolutionary rather than a revolutionary approach to design is adopted wherever possible. Thus any significant new civil and military aircraft developments in the immediate future can be expected to be derivatives of existing types, but there is no lack of innovative thinking in the various design bureaux, and it would surprise no-one in the West to find radical new designs emerging in the 1980s.

M.D.

Government decision awaited

SWEDEN

THE FUTURE of the Swedish aircraft industry hinges on an order from the Government to Saab-Scania for a new light attack aircraft, currently designated the B3LA. This has been the situation for the past two years, during which injections of Government cash have kept the project ticking over *but with the final decision to go ahead with development being constantly postponed.* Without this order Saab-Scania *cannot fully employ its design team and will almost inevitably have to abandon its capacity to develop and produce its own aircraft.*

In January the coalition Cabinet appointed a commission to examine the alternatives to the new aircraft and the economic consequences of a decision not to place the order with Saab-Scania. The commission is due to report this autumn. Saab-Scania has been allocated funds in the 1978-79 budget to continue design work on the B3LA, but shortly after the commission has reported the three non-Socialist parties in the ruling coalition will have to decide whether or not to ask Parliament to commit funds for full-scale development.

The political background is complicated and contentious. The Social-Democrat opposition, which according to the most recent opinion polls is well placed to return to power in the general election of September, 1979, *is against the* B3LA project, as is the small Communist party. Within the Government the moderates (Conservatives), who hold the defence portfolio through Mr. Eric Krönmark, have been energetically supporting the industry. Both the Centre Party of Prime Minister Thorbjörn Fälldin and the *Liberals contain factions,* principally in their youth movements, which would prefer to abandon the B3LA.

Evens

In July Mr. Krönmark put *the* betting on a decision favourable to Saab-Scania at *evens. He underlined that the* Centre Party had still not made up its mind despite remarks by Mr. Fälldin at the party conference which could be interpreted as indicating scepticism about the B3LA. The aggravation of the unemployment threat in an economy which is already facing severe contraction in shipbuilding, steel, textiles and other industries has been advanced as an argument for placing the B3LA order, but Mr. Krönmark has stressed the importance rather for Sweden of maintaining a foothold in an advanced technological field.

In fact for the past two years the Swedes have been facing up to a situation which implies a *radical* change in their whole defence philosophy. Since the last war *Swedish neutrality* has been complemented by a *defence based on conscription* and with sufficient weapons *potential to deter a possible* aggressor. The credibility of both the defence posture and the neutrality has been underpinned by a policy of manufacturing key weapons domestically. On the aircraft side the result was Saab-Scania's Draken and Viggen series.

In the post-1973 economic situation, which Sweden shares with other industrialised countries dependent on large energy imports, it has become evident that the country can no longer afford to develop and produce advanced weapons systems on its own, unless it can procure substantial foreign orders for *the weapons.*

Saab-Scania notched up its biggest foreign orders with the Saab 105 trainer and light attack aircraft. The subsonic B3LA has been designed as a replacement to the 105 with a more sophisticated weapons system. The industry has been arguing that *for this very* reason it has much greater export potential, particularly in the developing countries and *those outside the major power* blocs which cannot afford to *invest in sophisticated aircraft.*

However, even such an ardent supporter of the B3LA *project* as Mr. Krönmark has acknowledged that it would probably be the last wholly Swedish aircraft to be built. The Swedish aircraft industry cannot expect to continue in its present size and it is fairly evident that any new interceptor to replace the Viggen in the Swedish air force in the 1990s will have to be *purchased abroad or at best* developed in co-operation with foreign manufacturers.

Mr. Krönmark has already been marking out a fall-back position on these lines which *would preserve as much as* possible of Saab-Scania's design *and development capacity* should the B3LA decision go *against the industry.* Discussions have started with the Italians about the possibility of *a joint venture* light attack aircraft project. Aeritalia and *AerMacchi have been working* on a design known as the AMX which is similar to the B3LA and whose preliminary time schedule coincides with that for the Swedish aircraft.

The Italian project has been stimulated partly by a request from Brazil, but the Italians are understood to be interested in producing a rather more advanced design than that demanded by the Brazilians. They could also supply an *engine* for a *joint Italian*-Swedish aircraft. The project *has been at least* mooted to the Swiss, who are still looking for replacements for their Hawker Hunters and who have in the past co-operated with the Swedes in arms procurement.

Mr. Krönmark's Italian *soundings have not* been welcomed wholeheartedly by the *B3LA's opponents in Sweden.* The political consequences of *co-operating in weapons* manufacture with a NATO country would, it is argued, undermine Swedish neutrality. On the *other hand it is obvious that if* the preliminary discussions with the *Italians* could be firmed up the export prospects for the aircraft would be considerably enhanced and the sharing of development and component costs could entail significant budget savings.

The B3LA has, however, been designed not primarily as an export product but as one element in a hi-lo defence mix *for the Swedish air force* alongside Saab-Scania's more *powerful, more sophisticated Viggen* series. The Viggen will safe*guard* employment in Saab-Scania's aircraft production *division until well into the* 1980s. The interceptor version has only *just* started to come into service with the air force, and finance for a new attack version, now known as the A-20, is one of the factors under consideration by the current commission on the aircraft industry.

The Viggen's failure so far to win export orders underlines the industry's dilemma of how to maintain a design and development potential when it is limited basically to building series only for the domestic air force. The Viggen is at present contending for orders from Austria, *India* and Australia. Recently the Carter Administration hinted that it would "react negatively" to the sale of the Viggen to India. As the Swedish aircraft is powered by a modified Pratt and Whitney engine and incorporates other U.S. components, *Washington can effectively veto* its export. The Swedish Government *is contesting the U.S. atti*tude to deliveries to India.

Replace

The B3LA decision is fundamental to the future of the whole Swedish aerospace business. Domestic missile development *is hanging fire* until the issue has been clarified. Saab-*Scania hopes to replace the 05* and 04 missiles, production of *which is now closing down,* with a new range for the B3LA. Work on the 372 air-to-air missile, which Saab-Scania has *been displaying at international* exhibitions, is no more than ticking over.

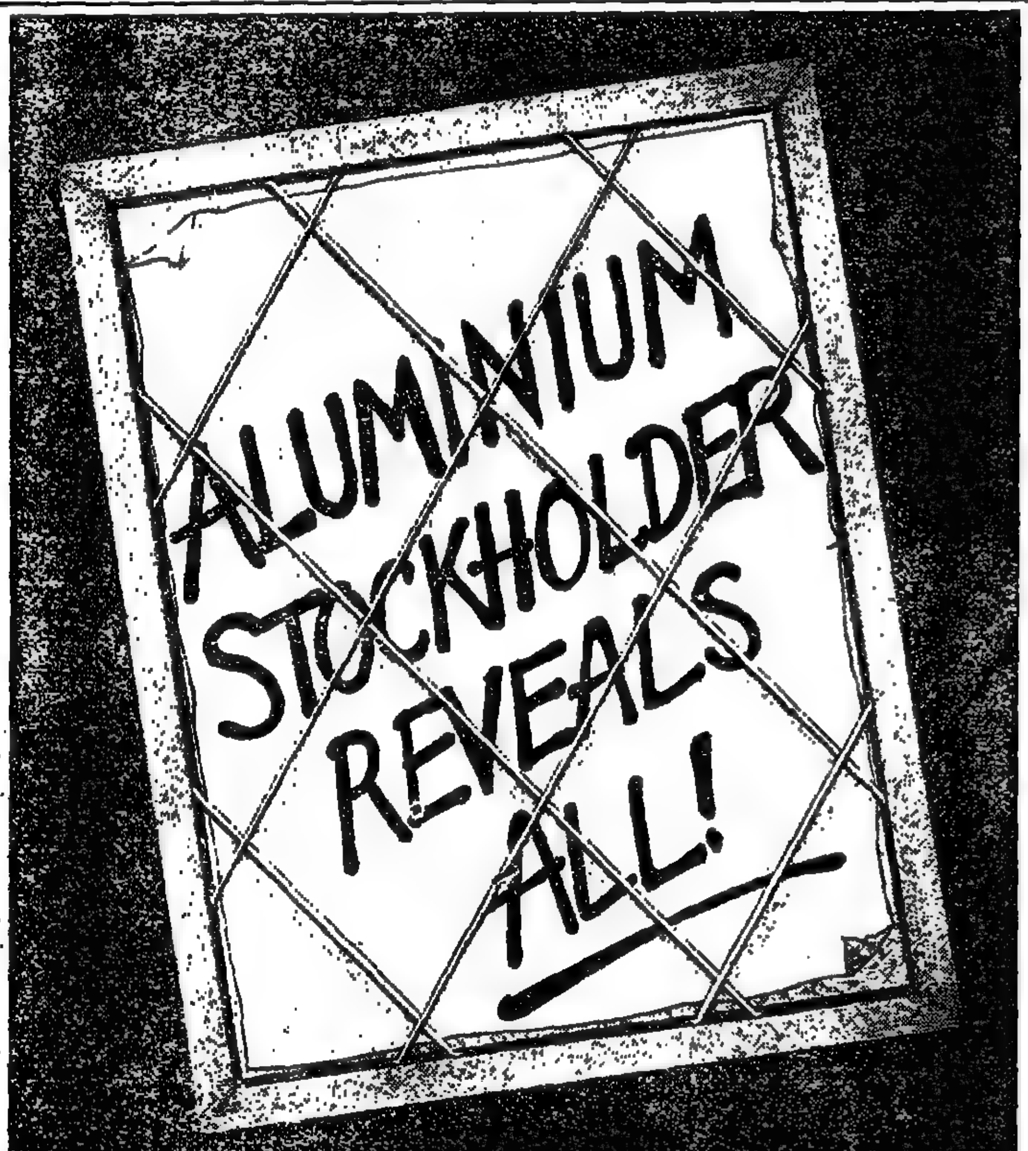
In the meantime Saab-Scania and Bofors have formed a joint company, Saab-Bofors Missile Corporation, which will be *responsible for future Swedish* missile development. Bofors is *currently delivering to the* Swedish army a close-range *laser-guided* air defence missile which is claimed to be "the best in the world within five kilometres in daylight." A night version is under development.

Saab-Scania's chances of moving into "alternatives" to military aircraft production have been widely ventilated in public debate within Sweden over the future of the industry. *The company* has developed a promising remote-controlled submarine robot *and is* into wind power, but most progress has come recently on the civil aircraft side. Sub-contracts have been obtained for delivery of components for McDonnell Douglas' new super 80 airliner, *while* the British Government's decision to proceed with the 146 short-haul feeder jet could mean orders worth some SKr 600m ($133m) for Saab-Scania if financing arrangements can be settled.

Sweden has a foothold in space technology by reason of its membership of the European Space Agency. Through the State-owned Rymdbolaget Saab-Scania is involved in computer parts *for the Ariane rocket,* while Volvo's aero-engine subsidiary, Flygmotor, *is working* on its combustion chambers. L. M. Ericsson has *received* order for components to be used in the satellite itself and the general impression within Swedish industry is that the telecommunications company is better placed to benefit from space projects than the aircraft manufacturers.

So the Swedish aerospace industry goes on living in a state of uncertainty pending a decision on the B3LA. Whether or not that decision is favourable, it will have to shrink in size. It is also becoming increasingly obvious that its *viability depends on greater* co-operation than before with *foreign aircraft builders*—and that raises political issues which the Swedes have only just begun to face up to.

William Dullforce
Nordic Correspondent



More State money needed

NETHERLANDS

THE PAST YEAR has produced a number of disappointments for the Dutch aircraft industry —but also an occasional glimpse of better things to come. The Dutch airframe manufacturer, Fokker, has now accepted the *failure of its ten-year-old* merger with the West German *Vereinigte* Flugtechnische Werke (VFW) group and halted *construction of the VFW-614* jet. Britain has opted to build the *HS-146* feeder airliner, which will be direct competition for Fokker's F-28.

The good news is that Fokker expects to make a small profit in what is probably its last year of joint operation with VFW, and demand for the European Airbus is finally picking up. A Dutchman stands a good chance of being the first European astronaut, while a large body of opinion wants a stronger Dutch commitment to space research.

Despite notable Dutch success in cross-border mergers in other fields of industry the decision to link up with the VFW group proved an unhappy one. Close Government involvement in the aircraft industry and concern for jobs meant Fokker could not switch work from factories in one country to under-used plant in another even when economic logic dictated.

The failure of the VFW-614—only 16 of the short-haul jets have been sold compared with a break-even total of 250—put strains on the partnership. It was claimed that the Amsterdam-based sales organisation was not putting as much effort into promoting the 614 as into the Fokker 27 and 28.

The German Government's decision to take a more active *interest in the fortunes of VFW* now seems certain to lead to *the creation of a* unified German aircraft industry comprising *VFW* and *Messerschmitt*-Boelkow-Blohm (MBB). Talks now being held are expected to lead to an outline agreement by the end of the year.

Worried

Fokker is worried it will be left out in the cold and is insisting on at least a blocking share in the new group. It is determined that Holland should retain its position as one of only six Western countries with a self-supporting aircraft industry. Fokker now hopes that after the initial MBB-VFW link-up, more talks will be held aimed at Fokker rejoining the new group as a full partner.

Fokker has been a staunch supporter of a strong European aircraft industry. It sees failure to co-operate in Europe leading to the European companies becoming merely sub-contractors to the big U.S. manufacturers. It was therefore doubly dis*appointed by the British* decision to build the HS-146. Before stepping down in June in the wake of the breakdown of the *Fokker-VFW* link, executive chairman Mr. Gerrit Klapwijk *was scathing of the HS-146's* prospects.

The new aircraft not only represents a challenge to the *F-28: it signifies* a continuation of the belief in purely national *aircraft industries n Europe.* Fokker has sold 132 F-28s to 35 *operators* and *orders are often* only for one or two aircraft. *Maintaining a spares network* for such small numbers is expensive enough without another new aircraft to fragment the market even further, Fokker reasons.

After the company's worst-ever financial result in 1977 prospects are for a return to a small profit in the current year. The Duesseldorf-based central *holding company made* a loss of DM157.6m ($79m) in 1977. It drew on all its free *reserves* of DM150m to cover most of this loss. Fokker's net result has shown a pratically unbroken downward trend from a profit of DM18.2m ($9m) in 1969 but moving into such a heavy deficit has weakened Fokker's negotiating position in talks with MBB and the German Government.

Increased demand for the previously slow-selling Airbus and the breakthrough in the U.S. with the sale of 23 aircraft to *Eastern Airlines* are encouraging developments for Fokker. *The* company has a 6.9 per cent stake in the project, producing moving parts for the Airbus wing in Holland and parts of the fuselage in Germany.

The development of a new version of the Airbus jet, the A-310, would also bring more work to Fokker's plant. Sales of the new aircraft have been very encouraging and orders have been *placed by a number of* European airlines. Until Britain *decides on its role in the new* aircraft Fokker's position will remain unclear. The European consortium has opted for a new fuel-saving wing designed by Fokker in Germany.

Fokker has also been tentatively chosen to build the wing but if British Aerospace opts for the Airbus then the construction work would go to Britain, which already builds wings for the B-2 and B-4 Airbus versions. The UK firm *might also decide* it wants to design a new wing.

This would appear to put Fokker in the position of picking up only what the major partners do not want. But if Fokker were to get the wing contract this would involve considerably more investment on the part of the Dutch Government than has gone into the present versions of the Airbus. Given the competing claims for funds to develop a super F-28 and the Government's plans to cut public spending it is questionable whether the extra funds could be found.

In view of the check—temporary, it is hoped—to Fokker's *co-operation* with the German aircraft industry, Holland is now *looking for closer links with* France. The French are apparently willing to take a risk-bearing share in the develop*ment of the super F-28 and even* have a motor, the CFM-56, which could be *modified to go into the* new aircraft.

Interesting

On the sales side, France offers interesting prospects for Fokker. It has said it will order 12 F-27s for use as trainers by the French Navy if Holland decides on the Breguet Atlantique as a replacement for its fleet of marine reconnaissance Neptunes. The Dutch Cabinet has not yet decided whether *to opt for the Atlan*tique or for the American Orion, although it has eliminated the British Nimrod.

The French have also hinted *they* are interested in a maritime version of the F-27 and also in the F-28 as a possible replacement for the ageing Caravelles now flown by Air France and Air Inter.

Fokker's British-born marketing director Mr. Alan Buley hopes to sell 30 aircraft this year. Talks are continuing with Japan's domestic airways on the sale of an undisclosed number of short-haul airliners. Fokker *is offering a stretched* version of the Mark 6000 F-28 which *would* seat 100. Its *main* competitor is British Aerospace's *BAC* One-Eleven.

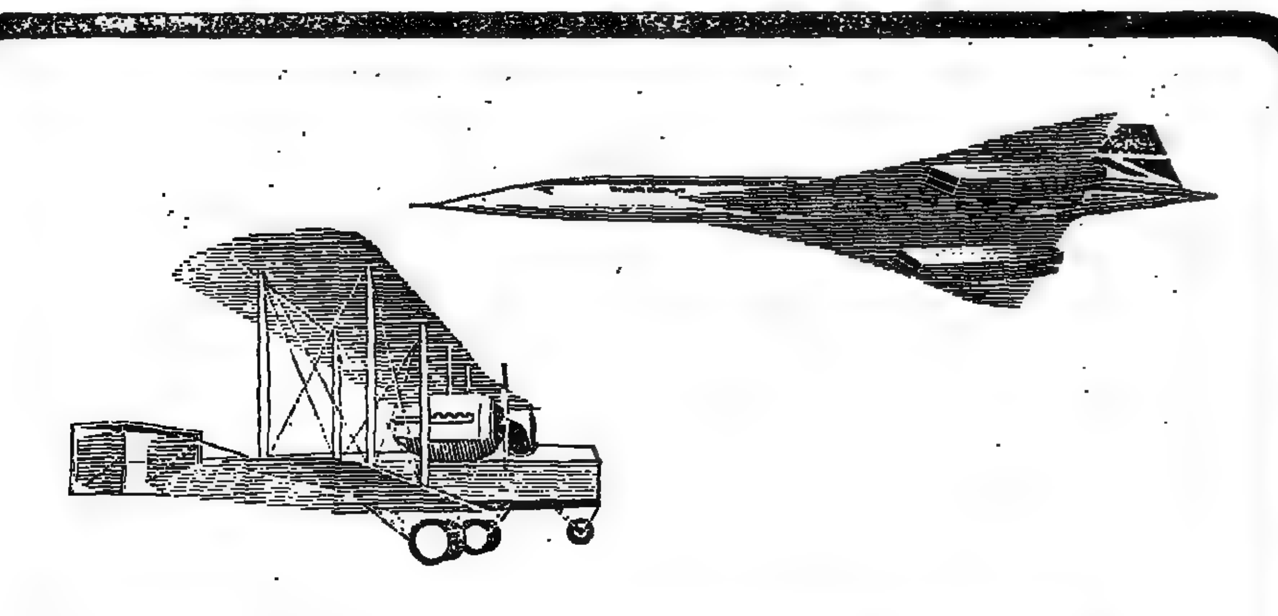
Two significant sales breakthroughs *have* already been achieved in recent months. Fokker sold its first F-28s in Britain with the announcement in May that Air-Anglia, which already flies F-27s, had bought two of the jets. Fokker also recently sold *four* aircraft to KLM. This is the first time for many years that Fokker has made a *sale to the Dutch* national airline, which normally buys American. *The four F-28s* will go into service with NLM City Hopper, KLM's domestic subsidiary.

Holland could be the first European country to put a man into space following the short-*listing of the 31-year-old* nuclear physicist Dr Wubbo Ockels for a spacelab mission. *Dr. Ockels'* personal triumph is perhaps not surprising considering *Holland's* strong involvement in research programmes.

The strength of the country's electronics and aircraft industries *form* a sound basis for space activities, while the spin-*off from space technology* is seen as a useful stimulus for companies such as Hollandse Signaalapparaten — a Philips subsidiary—and Fokker. The Netherlands Aerospace Institute (NIVR) is nevertheless worried that not enough is being done now that the initial *stages of the spacelab* laboratory and the Ariane *rocket programmes have passed* their peak. Lack of agreement within the European Space Agency (ESA) is delaying decisions on new work.

If Holland were to put the same proportion of its Gross National Product into ESA programmes as other countries it would have a *stronger voice* in decisions. This would require, however, a *doubling* in spending, says NIVR, on which Gov*ernment, industry, users* and research institutes are represented. *Whether Holland's cost*-conscious Government would agree to raise spending now is doubtful.

Charles Batchelor
Amsterdam Correspondent



ECONOMIC VIEWPOINT

The dollar: no time for despair

THE MARKET'S despairing reaction to the latest batch of apparently cosmetic or even merely irrelevant U.S. "defence measures" on behalf of the dollar, coupled with figures showing a still widening trade gap, suggests that chickens and perhaps vultures are flocking home to roost. In the moral tone which market men love to adopt, dealers talk of the effects of years of improvidence working through now that foreign central banks are no longer willing to finance folly without limit. However, the external value of the dollar is not a moral issue; and a different, possibly immoral analysis points to a very different conclusion.

The simple fact that balance sheets must balance reminds us first that a large flight from the dollar can only occur if someone is willing to finance it: that role has clearly been played, willingly or not, by foreign central banks. In the 18 months up to March they acquired some $60bn—far more than the U.S. current account deficit in the period: it follows arithmetically that the capital account was also in large deficit.

Then the dollar rallied for a period, and in the latest episode, to judge from all reports, intervention has been on a relatively modest scale.

The first impact of this dramatic policy change has been on the exchange rate. But this is only the beginning. The new situation will in due course produce changes both in U.S. internal policies and markets, and in capital flows (again, this is arithmetically inevitable). Provided there is not another policy lurch outside the U.S., the dollar's decline could be the beginning of its salvation.

This view may seem very odd to those who argue, as does the stern Bank Credit Analyst in Montreal, supported by the former U.S. Treasury Secretary, Mr. William Simon, from his holiday home, that the dollar's undoing has all been contrived by the Fed through gross permissiveness and an obsession with low interest rates. Indeed, I have argued rather strongly before now that excessive domestic credit expansion gives a good measure of what is wrong, and that the Fed, which has hardly even heard of this measure, misses the point by basing its policy entirely on the growth of the U.S. money supply.

However, measuring an effect is not necessarily the same as identifying its cause. DCE, as is well known in any country which has had to submit to IMF disciplines, is a measure which adds the whole private sector deficit across the exchanges — current and capital — to the growth of the money supply; but as we have already noted, the private sector can only go into deficit if it is financed from the public sector.

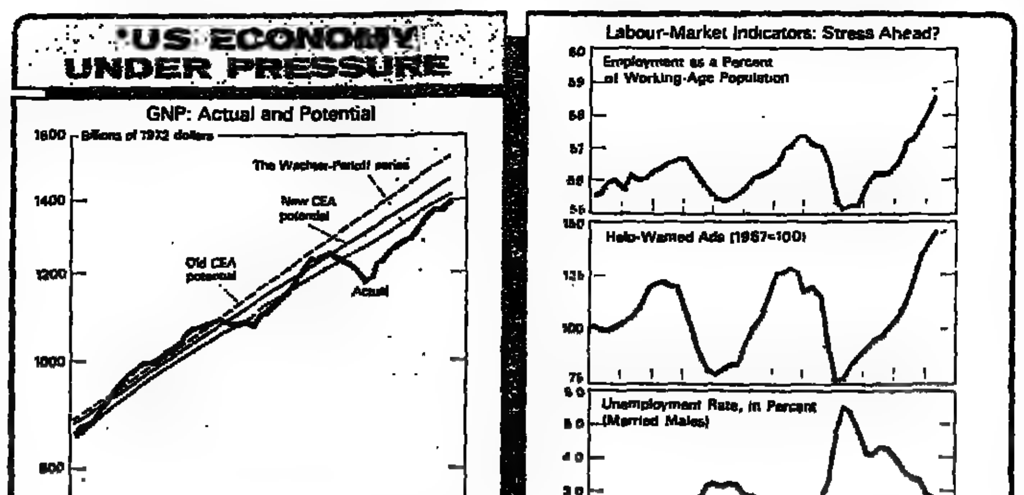
When Britain was in trouble, the Bank of England and the Treasury provided most of this finance by running down the reserves and borrowing from abroad. Where the dollar is concerned, nearly all the finance has been provided by foreign central banks.

The question, if moral questions must be raised, is how far their role was a purely passive one, mopping up dollars improvidently created in the U.S., and how far an active one, holding down currency values and incidentally financing net exports from their under-employed economies. Intervention, after all, can be seen as a way of financing extra demand without actually going into debt. In addition, Britain is not the only country which has been glad of the opportunity of acquiring reserves for their own sake.

There is no need to believe that the Germans and Japanese were consciously engaged in covert reflation, that the British had turned mercantilist, or even that the Americans were consciously trying to drive down the value of the dollar. One need only remember that central banks have after all had some freedom of choice in their intervention policies to see that it makes some sense to regard intervention as one of the causes of the turmoil surrounding the dollar, rather than simply as one of its effects. The results of turning conventional thought upside down in this way are quite interesting.

One of the great arguments about the dollar in recent months has revolved around the effect of intervention on the U.S. money supply. Central bankers in other countries sometimes like to argue that they are in effect doing the Fed's dirty work for it by mopping up surplus dollars, and transferring the excess money into their own currencies. They are, in effect, importing U.S. monetary inflation (presumably because they would rather import it than stand the consequences in the exchange markets).

U.S. analysts, notably the arch-monetarists at the St. Louis Fed, have always denied this. They point out that foreign intervention makes no difference to the U.S. money supply, because when the Bank of England or the Bundesbank buy U.S. Treasury securities, the U.S. Treasury has to sell correspondingly fewer securities on the domestic market.



This is in fact a pretty accurate account of how the U.S. Treasury operates; but it does not mean that foreign intervention makes no difference at all within the U.S. Intervention makes no difference to the U.S. money supply, because the U.S. authorities choose that it shall not.

When quantities are in effect fixed, one must look at the price. What intervention has in fact done is to enable the Fed to control the money supply without driving up interest rates. If the U.S. Treasury had had to sell $60bn of additional securities on its domestic markets in the 18 months to last March, it cannot be doubted that the resultant rise in rates and complaints of crowding out would have rivalled those heard in an earlier period in London.

It is only too easy to draw a moral from this story about pulling chestnuts out of fires: its real interest is technical. It is only because interest rates in New York have been so much lower than they would have been in a clean float that private capital has been able to flow out as well. Intervention has not merely financed U.S. merchandise imports, but has sucked so much money out of the Eurodollar market that U.S. banks have found it profitable to lend some $22bn to their foreign branches. Deficit countries are usually borrowers; it is only intervention which has enabled the U.S. private sector to lend as it overspends.

Since intervention (whether active or passive) has had such far-reaching effects until now, the results of cutting it back are bound to be dramatic. The motives for stopping intervention are probably as confused as the motives for intervening. There is disillusion with the results, as central banks have re-learned the old truth that the more they finance speculation, the more speculation there is, and that they have in effect been creating hot money. Politicians may prefer to inflate their own money supplies in ways which earn them more political credit. There is also some feeling that the Americans should now be left to sort out their own mess.

Many American economic officials probably agree with this assessment privately. First, there are clear signs that the U.S. economy, in its fourth year of rapid growth, is nearing the limits of capacity. The Council of Economic Advisers has been trimming its own estimates of what is possible, and outside academic measures of productive potential are still lower. Labour market indicators, once women and teenagers are eliminated, show sharply rising pressure, which is being reflected in wages. Some goods — notably in construction—are scarce and rising sharply in price. In short, ordinary demand management suggests that it is time to cool off a bit.

Foreign central banks, which have so assisted the U.S. expansion in recent years, may now help to impose a measure of deflation while sparing the President and his advisers any awkward political decisions. The U.S. Treasury is approaching a heavy funding season in which it may not be able to rely on heavy buying from overseas. Interest rates are likely, initially at any rate, to rise sharply. The process is already beginning, witness yesterday's increases of prime rates.

This rise will assist the turnround in the private capital account which must in any case occur in the absence of intervention, for the central banks in the capital markets are like a whole herd of elephants changing sides in an ark. The rest of the animals will in due course lurch the other way, though there may be panicky talk of a capsize. The U.S. Treasury's last "defensive measure," the suspension of Regulation M to facilitate foreign borrowing by U.S. banks, only makes sense as a measure to help capital inflows and limit interest rate disruption.

Sceptics in the market may wonder whether the dollar can possibly stabilise, let alone recover, purely in response to private capital flows. Experience with sterling should give them some reason to suppose that it can: but in any case the trade account may well be deceptive.

The weakness of the dollar has no doubt provoked not only leads and lags in settlements, but also hedge buying. Constant talk of oil import quotas is likely to have inspired some stockpiling. Trade in manufacturers—the real heart of the deficit—should now begin to respond to exchange rate movements through import substitution (Volkswagen Rabbits from Pittsburgh, for example) and export opportunities. If net foreign demand rises, deflating domestic demand is less unpalatable.

To be sure, a promising situation can be spoilt by wrong-headed policies. As long as President Carter retains his acute distaste for high interest rates (though the rise would be mainly temporary if allowed to work through): as long as he believes that lectures from Mr. Robert Strauss are an anti-inflation policy; and as long as he is assured by the OECD that U.S. credit creation (deliberate or not) has been perfectly moderate, he will make mistakes. But at least, and for the first time, foreign central banks are allowing financial pressures to argue for deflation, and the domestic economy reinforces these arguments, while the trade situation almost certainly looks worse than it is. This is not the time to despair of the dollar.

Anthony Harris

Letters to the Editor

Schedule D taxpayers

From Mr. G. Scotton

Sir,—In his letter (August 29) Mr. J. Andrews criticised the article (August 24) which concerned the possibility of a change in the basis of assessment for Schedule D taxpayers. He stated that it was "simply not true that many self-employed pay tax up to 15 months in arrears," and supported this contention by giving an example of a business which had a financial year-end on April 5. In this example, it was correctly stated that the tax on profits for the year to April 5, 1981, would be payable in two instalments—on January 1 and July 1, 1982.

I feel that Mr Andrews is seriously under-estimating the intelligence of Schedule D taxpayers, and their advisers, by assuming that they would arrange their affairs so as to have a financial year-end on the worst possible date for tax purposes.

For example tax, in two instalments, on profits of a business with a financial year-end on April 30, 1981, would not become payable until January 1 and July 1, 1983, approximately 24 months in arrears.

I know, from practical experience, that many self-employed do in fact have a financial year-end on April 30, and therefore enjoy a considerable cash flow advantage which would most certainly be lost if they were to be assessed on an actual basis.

G. Scotton.
209, West Barnes Lane, New Malden, Surrey.

Problems at Brent

From Mr. J. R Sutcliffe.

Sir,—In your article (August 18) on Shell's problems with the Brent field, you named no villains, and Mr. Mehta has cast Shell in that role in his letter (August 24). Shell are by no means blameless for their present plight, having wasted five years before starting their search for an NGL separation plant site, and they have thereby forced Mr. Millan into an extremely difficult position. However, far more culpable in my view is the performance of the Health and Safety Executive in the Mossmorran issue, and this ought to be of national concern.

Their written evidence to the 1977 Public Inquiry totalled 6½ pages, of which only 4½ pages related to the applications in question. In one page on the proposed ethylene cracker, the HSE inspector concluded that there ought to be no unacceptable risk, although he said he had no details of the size or type of plant. He rather curiously added that there would be a residual risk despite safety precautions; there should therefore be additional safety precautions. His colleague said that if the NGL plant were designed and operated to currently acceptable safety standards (a ubiquitous HSE expression), "there will be no intolerable situation" imposed on local communities. He said that the safety of residents within 1km of a refrigerated LPG storage tank at Mossmorran was questionable, and that they ought to be rehoused. At the inquiry, he said that this concern did not extend to residents of Aberdour and Dalgety Bay within 1km of a refrigerated ethylene tank because, unlike Mossmorran, Braefoot Bay was not a process plant.

The HSE gave no consideration to hazards beyond the loading jetty, and their evidence constitutes six pages of the 428 page Inquiry Report.

On radio hazards, the HSE advised the Secretary of State that if the local Radio Forth transmitter were resited there would be no danger. Any shipborne radio problems could be sorted out by appropriate but undefined safeguards. The Shell report they quoted as a reference analysed only two radio sources in detail and emphasised that many other sources would need investigation before a firm conclusion could be reached. Shipping, particularly naval vessels, was singled out as of potential major significance.

This is the organisation on which Mr. Millan has to rely in judging a planning proposal of which he has said that public safety must be the over-riding concern. Its views are similarly sought as authoritative opinion in comparable proposals throughout the UK. In my reading, they are totally unfitted for this responsibility, and there must be a strong case for a searching review of their function and the way they fulfil it.

J. R. Sutcliffe.
5, Seaside Place, Aberdour, Fife.

Land prices

From Mr. J. P. Pickering.

Sir,—In my experience, the farmers who are finding the going tough are those who missed the bus of low land prices of only a few years ago. These people, many of them modern whiz-kids, are caught up in the cost of servicing high loans or ever-increasing rents. Those who were firmly established as owner-occupiers at the right time have nothing to complain about.

Mr. Anthony Rosen (August 24) tries hard to make bricks using milk and vegetables and, of course, fails. The food manufacturers are disturbed, and rightly so, by the fact that the EEC imposes enormous import tariffs on the really important raw materials of their trade. Wheat, barley, maize, sugar, cheese, beef, pork, chicken and bacon all have to pay these import tariffs and these, not milk and vegetables, are the important items of our diet and of the food manufacturing industry.

Mr. Rosen's remedy of paying higher industrial wages is merely to increase inflation overall. No one, not even the farmers themselves, would really profit by such a policy. I think that Mr. Rosen, like many other farmers, should realise that the role of farming is to serve the public and not the public to serve the farmers.

J. P. Pickering.
Orchard Place, Hexham, Northumberland.

Radiation monitor

From Dr. E R Turton

Sir,—Why cannot David Fishlock and Lisa Wood state clearly that Aldermaston (August 26) does not yet possess a whole body radiation monitor; nor will it be able to use the one it is having installed until 1979?

Why must you print a photograph of such a monitor? This only gives the misleading impression that it is in use at Aldermaston, which is not the case. In fact, your photograph was taken at the Atomic Energy Authority's Establishment at Winfrith—though you do not tell your readers this.

I cannot share the optimism of your correspondents about "the extraordinary lengths" to which Aldermaston has allegedly gone to protect its workers from plutonium radiation.

Whole body radiation monitors have been used at Windscale (since 1967) and Dounreay (since 1971). As from January this year, it has been reported that Aldermaston has been making use of the whole body radiation monitor at the National Radiological Protection Board's Unit at Harwell. This fact neatly underlines both the importance obviously attached to the use of such a monitor as well as its absence at Aldermaston.

E. R. Turton.
31, Fens Way, Hextable, Kent.

Sunday trading

From the Director General, The National Chamber of Trade

Sir,—Before the Association of Metropolitan Authorities decides to press the Government for a change in the law relating to Sunday trading may I suggest the authorities ask shopkeepers for their views on the subject.

The National Chamber of Trade represents about a quarter of a million shopkeepers, among a rich variety of other businesses and professions, and our experience suggests the vast majority want nothing at all to do with any wide-scale extension of Sunday trading. And I believe the same view is held by the trade unions representing the distributive trades workforce.

L. E. S. Seeney.
Enterprise House, Pack and Prime Lane, Henley-on-Thames.

Planning for polymers

From Mr. G. Christopher Karas

Sir,—Dr. Candle's letter (August 15) has a simple message — commercial viability is essential for an expansion in petrochemicals capacity. A conventional wisdom which, by and large, has been observed by most operations — even if judgment was sometimes clouded by over-optimistic hopes for economies from scale and process improvements.

If I understand Mr. Dingle correctly (August 22) he believes that, because petrochemicals facilities are in the hands of a few powerful suppliers they can, and should, materially influence the development of the market structure for polymers.

One wonders what he has in mind. Certainly, on the supply side, there may be further scope for rationalisation—and indeed the chronic low rate of growth in demand we now experience makes capacity planning extremely difficult. In the absence of such rationalisation we may yet have to face up to, and very reluctantly, EEC intervention in the whole issue of petrochemical capacity.

If, however, Mr. Dingle refers to demand then it is very difficult to see what could be done by the polymer supplier. There is no doubt that in the early years of the polymer industry individual materials producers, through their applications development efforts, exerted a great deal of influence on the development of the market. Have we not, however, now reached a much more mature state?

In 1976 consumption of plastics in the UK exceeded 2m tonnes. According to the British Plastics Federation some 80 per cent of this was used in industrial applications — most of them very remote from the direct influence of the materials-producing majors. In economists' terms — we are in a "derived demand" situation.

One could argue that much of this stems from the applications work within the end-use industries. Certainly this must be the case for the key user sectors such as in packaging and building areas. Moreover, the independent plastics processors have made a major contribution in new product development across the whole field of applications.

This is not in the least to minimise the work of the polymer suppliers, but rather to place their roles in an up-to-date perspective. This must be to provide support for the processors and end-users—assistance which can range from advice to the development of special grades.

Clearly the polymer supplier will aim at encouraging a greater use of his materials and extend their potential by innovation. But it would be wrong to suggest that the polymer supplier should carry the main burden of applications innovation. This must come from the plastics processing sector and the end-use industries.

It must be recognised, however, that all concerned with new developments are subject to a simple economic truth. The extent to which any innovation is absorbed in the market place depends on the ability and strength of the end-users to apply them—in the case of polymers this means the UK economy as a whole.

In its formative years the UK plastics processing industry has had to survive on a thin gruel of markets whose own capacity for development has been sapped by national economic uncertainty. Is it any wonder therefore that there are weaknesses in the UK plastics processing industry? Indeed, might not one argue that its ability to survive and grow at all on this diet is an unrecognised strength.

A restructuring of the market for polymers will only grow from the roots of the market itself. The role of the polymer industry, and in particular the processing sector, must be essentially that of the careful husbandman—tending and nurturing the development. It is surely up to the various Sector Working Parties to concentrate their efforts on ensuring the necessary skills and resources are available.

In a stable and ordered market place polymer capacity planning will look after itself.

G. Christopher Karas.
30, Killester Gardens, Worcester Park, Surrey.

Company donations

From the Editor, Labour Research.

Sir,—In Men and Matters (August 21) there was a reference to figures produced by the Labour Party's research department on company donations to the Conservative Party. The General Secretary of the Labour Party in a letter (August 24) referred to these same figures as "research done by the New Statesman." In fact, the source of these figures is an article due to be published in the September issue of "Labour Research," the monthly journal of the Labour Research Department, an independent trade union research centre, founded in 1912.

Brenda Kirsch.
78, Blackfriars Road, London, SE1.

Motorway tolls

From the Managing Director, Fine Tubes Ltd.

Sir,—"Lombard" (August 24) arouses—I cannot say "makes"—the case for instant decision by Ministerial fiat, in this instance to an increase in the toll charge for the Severn Bridge.

Whatever the merits of his case, there are none for the example he selects. It has never been apparent why bridges alone in the motorway network should be required to bear charges. We in the provinces who depend on bridges, whether over the Severn, the Tamar, the Forth or, soon, the Humber, would accept the impost more readily if we felt our metropolitan cousins were prepared to share the burden.

Could we begin, perhaps, with the "elevated" section of the M4, and the Birmingham M5/M6 complex, which, judging by current repairs, will soon equal the total cost of a bridge.

T. M. Barclay.
Estover Works, Crownhill, Plymouth.

Exporting to Japan

From the International Director, Thorn Gas Appliances (International) Ltd.

Sir,—In attributing the meagre level of Japanese imports from the UK to the inadequate export efforts of British industry, neither of your correspondents, Messrs. Miyoshi and Newman, have explained just why in that case highly aggressive and successful exporters like the Americans, Germans, etc., have similarly failed to make a satisfactory impact in Japan.

The relevant trade deficits with Japan of some leading industrial countries are as follows:—

	$m. 1977	(1976)
		(Source OECD)
U.S.	7,321	(4,054)
France	445	(423)
W. Germany	1,288	(1,015)
Netherlands	1,007	(834)
UK	991	(555)

Indeed, Britain's record compares favourably with that of other industrialised countries. Using dollar figures, Britain has maintained her percentage share of Japan's imports at 1.4 per cent over the period 1974 to 1977 whereas that of West Germany has dropped from 2.3 per cent to 2.1 per cent and of the U.S. from 20.4 per cent to 17.5 per cent. Japan's own trade figures show that British exports to Japan are among those showing the greatest growth in the first half of this year, rising by 14.3 per cent in yen terms compared with 7.6 per cent for West Germany and a drop of 10.2 per cent for the U.S.

Mr. Nichols, in his letter, suggested a number of factors which caused frustration to our exporters. Many of these stem from the days, not so long past, when Japanese industry enjoyed considerable protection. Japanese business leaders have acknowledged that Japan has to change her industrial structure to meet the new international economic environment. Your newspaper, for instance, has published reports of a crash programme to increase imports. We hope that these and other measures will promote a generous growth in imports and not just lead to the stockpiling of raw materials.

Mr. Newman's description of the crucial need to cultivate long-term business relations and understandings in Japan is correct. It is a pity that he did not mention that there has been for many years in Tokyo and Osaka a large body of expatriate British businessmen from our major concerns and the UK trade companies, working to this very end.

Although Mr Miyoshi indicates that in his opinion short-term visits to Japan are inadequate, they are not when new innovation is the keynote; for I recall a planned operation which did find a partner in two weeks' travel, and draft agreements were exchanged for business valued at 5,000m yen.

The solution to the trade problem needs action from both sides. We each know a great deal about the other's basic industrial policy. Can we not get together for positive co-operative action to achieve our objectives?

J. C. Edwards.
Station Road, Stechford, Birmingham.

Today's Events

GENERAL

Statement expected in Paris by M. Jean-Paul Parayre, head of Peugeot-Citroen, on his company's plans for Chrysler's operations.

Bank of Sweden may cut bank rate.

M. Joel le Theule, French Transport Minister, in Bonn for talks with Herr Martin Gruner, State Secretary for Economic Affairs, on A-310 version of European Airbus.

Prince Charles and Dr. David Owen, Foreign Secretary, attend funeral of Jomo Kenyatta, late President of Kenya.

Prime Minister opens new Triplex windscreen factory at Kings Norton, Birmingham.

Mrs Margaret Thatcher, Conservative Party Leader, touring Berwick and East Lothian constituency.

Meeting of Trades Union Congress general council, Metropole Hotel, Brighton.

Announcement by Mr. A. Wedgwood Benn, Energy Secretary, on new energy course by Open University.

Cereals management committee of Common Market Commission to consider export tenders for wheat and barley.

OFFICIAL STATISTICS

Publication of Energy Trends by Department of Energy.

COMPANY RESULTS

Final dividends: Crouch Group, Linfood Holdings, Sobranie (Holdings). Interim dividends: BBA Group, Boustead, Bridgewater Investment Trust, Church and Co, Doranda Holdings, Ladbroke Group, John Laing, Macfarlane Group (Clansman), Matthew Wrightson Holdings, Misconcrete (Holdings), Scottish Agricultural Industries, Small (John C.) and Tidmas.

COMPANY MEETINGS

CII Industrial, Carlton Tower Hotel, SW, 12. Caird (Dundee), Chamber of Commerce Buildings, Dundee, 12. Initial Services, Connaught Rooms, WC, 12.15. MacDonald Martin Distilleries, Queen's Dock, Leith, 12. Sylton, Post House Hotel, Bramhope, 2.30. Vinten, Angel Hotel, Bury St. Edmunds, 12.

An ice-cream millionaire turns his talents to the print shop

BY TONY FRANCE

PEOPLE WHO buy printed material from a High Street print shop, whether on a domestic or business scale, are probably unaware of a revolution that has taken place in this part of the printing industry in both technology and management.

There have been few changes in what might be called the basic printing method, letterpress, since the days of Caxton. This applies particularly to the methods used in the small print shop. Because little change took place for some 500 years, printing has become a highly conservative industry, with a strong resistance to new ideas.

Attempts to introduce new technology in the newspaper industry have caused considerable problems. The impact on the small printer has been just as great, though less spectacular, and has therefore passed largely unnoticed.

For the small printer, refusal to adopt new technology has proved suicidal. Shops which would not change old-fashioned methods found themselves undercut by those using the new processes, and went bankrupt.

The new methods being used by successful small printers are not, in fact, so very new — offset litho printing has been around for a long time in different forms, and electrostatic copying machines are now in use in most offices.

In recent years both techniques have been considerably refined, while the skill needed to produce good quality print has been greatly reduced. These factors, coupled with a new approach to establishing print shops, has brought about a revolution behind the scenes in the High Street printers.

It all started in 1971 when five offset litho-based print shops were opened in the North East, starting in Newcastle-upon-Tyne. The company concerned, Prontaprint, was launched by a man with considerable experience of franchise operations.

Mr. Edwin Thirlwell made his first million in the ice cream business, and saw no reason why the successful franchising methods he used could not be used equally well in the printing business.

He considers that the essence of success is a full and continuing relationship with each licensee, starting with a training course and continuing with marketing and publicity support, quality control, assistance with staff and supply of equipment and materials.

Franchise

There are now some 30 shops in the Prontaprint chain, and in the seven years of operation there is no record of a shop having to close through failure, Mr. Thirlwell claims.

An interesting aspect of the business is that none of the existing licensees were previously printers. People taking a Prontaprint franchise have come from a variety of commercial, managerial and professional backgrounds. The company says the idea generally appeals to the "business executive" type wanting to go into business on their own. Typical operators include an architect, a chef, and a newspaper advertisement manager.

Investment required is around £10,000 to open a Prontaprint shop. This has allowed the company to expand rapidly without having to rely on generating its own funding to open new shops. The holder of the franchise deals with the retail management problems, as the owner and operator of the print shop. As the company relies on a continuing 10 per cent royalty on sales, it too has a strong vested interest in ensuring each shop continues to increase its business.

Starting a new business, possibly for the first time, is a period of great stress and mental pressure, but in buying a Prontaprint franchise the company says that much of this is relieved by the standard systems, training, marketing and management back-up available to the licensee.

The town of interest is visited with the prospective licensee so that the business potential of the area can be assessed and suitable premises found. The overall design and appearance of the shop is standardised to make them instantly recognisable.

The name takes up to 40 per cent of the window area, and a "point of sale" feature is a cartoon character printer embodying the "fast and friendly" slogan of the company. Customers are offered free coffee while they wait. The "payment on collection" terms are displayed on the till fronts, which is a feature of the Prontaprint system. By insisting on payment at the time of collection the company says most of the problems associated with cash flow are eliminated, and it helps to maintain a competitive price structure.

Based on the premise that print customers are not all highly skilled print buyers, but do need to have an accurate price and a guaranteed time when the job will be ready, the shops work from a standardised price list.

Typical jobs include letterheads, business cards, accounting stationery, quantity survey reports, right through to collated 500 page documents. All can be accurately costed and timed. Prontaprint lists over 200 typical jobs to assist the shop operator.

Where necessary, licensees can generally be introduced to sources of finance to supplement their own capital. This usually takes the form of a bank loan and/or leasing or hire purchase to obtain the necessary equipment. But all licensees are required to have a substantial amount of their own capital invested in the business. This is considered an essential element for success of the operation.

The licensee is given a four-week training course. The first two weeks cover all aspects of running a Prontaprint shop from basic product knowledge to preparation of artwork, simple offset printing, customer relations, product knowledge, recruitment of staff, basic accounting, sales promotion, use of ancillary equipment, etc.

The final two weeks are spent in an operating shop to gain practical experience. A training manual is supplied for use during the course, and is retained for future reference.

Advice and assistance are given with the purchase of equipment, and a package of items including till rolls, point of sale material, standard invoice sets, an accounting kit and standard promotional artwork is also supplied.

Launch

Once the shop is fitted out and equipped, a launch campaign is organised, after a settling-in period, and is paid for by Prontaprint. The company has regional directors to keep in touch with licensees, and provide help and advice. For example, the costs of basic raw materials are monitored, and new price structures are suggested when the retail margins are beginning to be eroded by cost and overhead increases.

Prontaprint obtains group rates on paper, ink and other materials; and group discounts on equipment, motor vehicles, insurance and health schemes etc. As well as legal and management advice, other back-up services include relief managers for holidays and illness. At present 5 per cent of the royalty income is used for promotional activities, such as Yellow Page advertising and other marketing aids.

By the end of this year there should be 75 shops operating in the UK, with total sales topping the £2m mark — a substantial turnover in jobbing printing. Target for the chain is 400 shops.

Part of the value of such a network is that it enables customers to prepare artwork in one place and then print it in the shop nearest the distribution point. One Fleet Street public relations consultancy produces finished artwork for a City firm's house magazine. This is sent by rail ("Red Star") to Darlington and 500 copies are printed in the local Prontaprint shop for distribution to the plant's workforce just down the road at Newton Aycliffe.

Benefits claimed include saving in transit costs (flat artwork rather than bulk copies) speed of production—two colours in two days; and a cost saving of 60 per cent compared with printers serving the Fleet Street area.

Plans are already well advanced to take Prontaprint into Europe. A pilot operation is already running in Australia, and is planned for the Middle East. The company says that development in Europe could well result in print jobs being created in Birmingham for printing in Dusseldorf by the early '80s.

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COMPANY NEWS

BOC profits down £12m to £48m for nine months

WITH group third quarter profit depressed by poor results of the ferro alloys business of the U.S. subsidiary Airco and of the metals businesses in Europe and Africa, pre-tax profit of BOC International fell from £60.4m to £48.8m in the nine months to June 30, 1978.

There was also little sign of improvement in the level of activity of the group's other main businesses in Europe, the directors report.

After six months, pre-tax profit was down from £36.5m to £26.2m.

Adjusting for last September's rights issue, earnings per £1 share are shown to have fallen from 8.70p to 5.60p.

The results of Airco, which became a wholly-owned subsidiary in May have been consolidated for the first time in the nine-months' figures from October 1, 1977. In the corresponding period and for the year to September 30, 1977, group results included only 34 per cent of Airco's pre-tax profit.

Of the £42m (£15.7m) contribution to trading profit from the Americas, £40.9m relates to Airco. A £20.4m deduction has also been made from trading profit to exclude that part of Airco's profit which is attributable to outside shareholders in the period before Airco became a subsidiary.

Sterling strengthened only marginally over the three months to June 30, 1978 and the effect on group profit before tax was not material.

Sir Leslie Smith, chairman of BOC International . . . depressing third quarter with poor results from Europe.

The group's policy includes revaluing assets on to a replacement cost basis and charging depreciation on the revalued amounts. The practice has been extended progressively to cover further classes of assets (including those of Airco) so that most of the group's assets are now shown in the balance sheet on a revalued basis.

The depreciation arising from the revaluation of further classes of assets during the current year (including those of Airco) is estimated at £5m for the nine months, which has been charged in arriving at the group trading profit.

	Nine months 1977-78 £m	1976-77 £m	Year 1976-77 £m
Sales	917.0	499.1	670.8
Operating costs	782.2	415.6	536.1
Depreciation	40.1	26.9	25.7
Associates share	2.8	17.7	25.0
Trading profit	88.5	75.2	101.8
Europe	17.0	29.7	39.5
Africa	11.5	11.1	16.7
Americas	42.0	15.7	19.9
Asia	3.2	3.6	4.9
Pacific	14.8	15.1	20.8
Airco adjustment	20.4	—	—
Interest	19.3	14.8	19.6
Profit before tax	48.8	60.4	82.2
Tax	24.4	31.3	35.1
Net profit	24.4	29.1	47.1
Minorities	6.3	5.7	7.7
Available	18.1	23.4	39.4

At June 30 this year, fixed assets are shown at £809.4m (£433.9m at March 31, 1978), associated companies and investments £24.5m (£152m) and working capital (excluding bank balances and short term loans) at £281.9m (£126.7m). Net borrowings and finance leases amounted to £512.9m (£230.7m).

See Lex

Pearl life premiums well ahead

WITH ITS underwriting loss £1.05m higher at £2.96m, the taxable loss of the general branch of Pearl Assurance jumped from £0.22m to £1.17m in the June 30, 1978 half year. General branch premiums written totalled £20.92m compared with £18.24m.

Directors of the general branch say that while provisional half-year figures are never a reliable guide to the full year, this branch is unlikely to make a positive contribution to the group's profit for 1978 in view of the first half estimates.

On the life side, ordinary branch new premiums written in the half jumped from £4.8m to £7.8m, and new sums assured were £196.2m compared with £180.7m. New annuities per annum were £26.1m (£6.2m). Renewable premium income was £28.38m (£23.21m) while single and considerations for annuities were £8.04m (£3.27m).

With the industrial branch, new annual premiums were £9.7m (£8.3m) and new sums assured were down £0.6m to £123.1m. Premium income was £39.98m against £37.48m.

Directors say second half prospects are good, but say it would be unreasonable to expect the rate of growth of the ordinary branch to be maintained. More rapid growth is however expected in the industrial branch.

The interim dividend is maintained at 3.85p net per 5p share. In 1977 an 8.73518p final was paid on available profits of £6.47m.

General branch directors say the results are disappointing and that almost 85 per cent of the total loss was incurred on UK business, which is predominantly property and motor. These accounts suffered underwriting losses of £1.8m and £0.6m respectively (£1.11m and £0.65m).

They say the marine, aviation and transport business is included in the premiums written but excluded from the underwriting and trading results as firm figures are not available. Their effect on results is, however, expected to be marginal.

Investment income of £1.70m (£1.69m) excludes income on stockholders' funds brought directly into the profit and loss account. Reflecting the generally lower interest rates in the period, this is estimated at £684,000 (£708,000) before tax.

In the motor account, motor cycle business produced satisfactory results but there was a worsening in the results of the private car and commercial vehicle business mainly owing to the high incidence of claims in the early part of the year. Rate increases were introduced in July.

● comment

Pearl was not expected to do well out of its general business this year, with the foul weather and the fireman's strike of the first quarter sending up the incidence of claims in the motor and property accounts. Moreover, the remedial measures already announced are likely to take 12 months to work through in the shape of higher premiums. All the same, the rise in the first half underwriting loss from £1.91m to £2.96m—barely short of the £3.04m loss recorded for the whole of 1977—knocked market confidence, and the shares lost 12p to 252p. This was despite the evidence that the life side has been doing well, at least in respect of those up-market areas—unit-linked assurance and the self-employed pensions business—where Pearl has hitherto been lightly represented. But, however sparkling the new business figures here, they are unlikely to have much impact on Pearl's huge (and, in the case of the industrial branch, sluggish) volume of low premium and high expense life business. It will take time and continuing success—or a profit on the general side—to convince the Stock Market that Pearl is no longer the prisoner of its history.

Insurance side lifts London United

WITH INSURANCE activities increasing their trading contribution from £1.27m to £1.76m and easily offsetting a £93,000 decline from other sources, taxable profit of London United Investments climbed 30 per cent from £1.24m to £1.61m in the June 30, 1978 half year.

Turnover for the period was £8.06m compared with £6.93m last time, and the profit came after group overheads of £224,000 (£210,000).

Directors are confident that full year profit will show a satisfactory increase.

The interim dividend is stepped up from an adjusted 2.10298p net per 20p share to 2.5p, and directors intend applying to the Treasury to take full advantage of the recent relaxation of dividend controls. They expect that the increase in dividend for the year will be in line with the increase in profits. Last year, when profits were £3.48m, a 2.80298p final was paid.

Tax for the period was £804,000 (£614,000), and after extraordinary losses of £1,000 (£12,000) available profit came out at £807,000 (£610,000), with dividends absorbing £214,000 (£180,000).

They say that since the year-end properties with a book value of £1.03m and rental income of £95,000 have been contracted to be sold. The net proceeds of some £1.09m will be applied in paying off part of its debenture debt and expanding its other interests.

● comment

London United Investments is yet another company that intends to take full advantage of the relaxation of dividend controls. Profits are set to climb by comfortably more than a tenth. Indeed the first half trend is expected to be maintained which could give a full year outturn of £4.5m compared with £3.48m at the pre-tax level. The group's dividend cover was at a high point last year so perhaps a 30 per cent dividend is on the cards. Certainly an 18 per cent increase in the net dividend at the halfway stage is a confident start. So the shares at 184p yield a prospective 4.5 per cent, and stand on a prospective p/e of 7.2. Among the group's insurance interests H. S. Weavers (Underwriting) Agencies showed a rise in taxable profits of over a quarter to £1.26m on the back of the group's specialisation in excess casualty underwriting, where there is a shortage of capacity. Likewise the Walbrook Insurance Company with a third increase in net premiums showed a rise in taxable profits of around 80 per cent to £500,000, mainly because more capital has been injected into the equity base and more business can be handled. Meanwhile the group continues to disengage itself from property, which now accounts for only 20 per cent of the capital employed, compared with 38 per cent last year. The group has often been linked as a possible bid candidate so the shares have their appeal.

Nu-Swift tops £0.55m in sparkling first half

RESULTS OF Nu-Swift Industries are at record levels for the first half of 1978 with turnover up 22 per cent to £5.34m and pre-tax profits showing a 7 per cent rise from £514,000 to £551,000.

The turnover total comprised £3.89m (£3.04m) home and £1.46m (£1.3m) export.

Earnings per share are shown at 2.75p against 2.57p and the interim dividend is lifted from 0.66p to 0.725p. The total last year was 1.566p on pre-tax profits of £908,000.

Order intake from all markets in the first half was up 16 per cent and continues to move forward in the UK, the directors say. They expect a record intake of orders in the second six months.

The unexecuted order book at £660,000 is still at a relatively high level while service contracts being received from the UK market are at unprecedented levels, giving that profitable division an active base from which to continue its successful operation.

The group is moving positively by more direct involvement to achieve a higher and faster profit growth overseas, the directors say.

The Spanish marketing subsidiary Nu-Swift Seguridad Y Defensa Activa SA, which was formed and commenced operation in the second half of 1977 is now starting to come into line with expectations.

While establishing its market, the subsidiary traded at a £40,000 loss (not consolidated), in the period, but the Board anticipates it will start to earn profits in the last quarter of this year.

HAZLEWOODS (PROPRIETARY)

The large reductions in directors' shareholdings at Hazlewoods (Proprietary) last year were in connection with the share placing in April 1977. This was not explained in yesterday's report on the group's prospects.

As known, following the reverse takeover of two private pickle and beetroot groups, Ossett and Humber, Hazlewoods came back to the market early last year. At the same time there was a placing of 943,000 shares on behalf of the vending families of Ossett and Humber.

INDEX TO COMPANY HIGHLIGHTS

First quarter drop at Johnson Matthey

FIRST QUARTER profits at Johnson Matthey and Co. fell from £5.56m to £4.52m in the June 30, 1978 period, on sales ahead from £103.16m to £113.72m. Sales exclude Johnson Matthey Bankers.

After tax estimated at £2.32m (£2.83m) and minority interests of £33,000 (£48,000), profit was £2.17m (£2.68m) before a £38,000 (£34,000) exchange gain. Retained profit came through at £2.21m (£2.71m).

The result is after debenture and other interest of £1.05m (£0.74m) and depreciation of £1.04m (£0.77m).

At June 30 net assets were £160.32m (£147.24m), with fixed assets at £35.77m (£28.45m), investments £10.84m (£14.02m), base stocks £30.53m (£23.51m) and net current assets £83.18m (£81.27m). If precious metal stocks had been based on market prices the amount in the balance sheet would have been higher by some £30.02m (£21.93m).

For all of last year pre-tax profit of the precious metal refiner, banker, chemical manufacturer, metal fabricator and colours, pigments and transfer producer was £18.87m (£21.32m) and dividends of 13.6183p net per £1 share were paid.

● comment

Johnson Matthey's latest first quarter is 18.6 per cent down on last year's record figure largely because of reduced demand from U.S. motor manufacturers for the group's car exhaust fume reducer. In 1977 its major client, Ford, decided to take more than the normal quarter total of autocatalysts. In the latest three months the demand has fallen back to more usual levels. The group is also being affected by the overcapacity in petroleum refining in the U.S. and has shut down its catalyst reforming operation in that country. The banking and trading division had a fairly flat period; the level of metal trading was relatively unchanged from the last quarter of 1977-78. Elsewhere operations are starting to look brighter and the third quarter should see a recovery on last year's very poor result. Overall, it looks like being a good year for the group.

Gripperrods returns to growth path

WITH INCREASED taxable earnings of £373,189 against £228,857 coming in the second half Gripperrods Holdings improved profit for the year to April 30, 1978 from a depressed £483,517 to £631,410. Sales by the group which makes carpet grippers and edging devices, rose £2.49m to £8.84m.

Stated earnings per 10p share were ahead from 8.9p to 12.48p and a gross final dividend of 2.99p lifts the total to 4.64p (3.38p). There were waivers on 957,675 (993,635) shares.

A tax charge of £321,395 (£260,102) left the net balance £310,015 (£223,415). Pressure on margins was responsible for the fall in profit in 1976-77 from a peak of £0.72m.

Fraser Ansbacher £1.2m banking turnround

ASSISTED BY a turnround from £837,000 losses to profits of £333,000 from its banking side, Fraser Ansbacher reports a return to profitability at the pre-tax level with a small surplus of £14,000 for the year ended March 31, 1978, compared with a £1,112,000 deficit for the previous 11 months.

Attributable loss was cut from £4.1m to £241,000, after tax of £69,000 (£30,000), extraordinary debits of £184,000 (£2.95m), a £150,000 (nil) transfer from general provision and minorities this time of £2,000.

The directors consider the full year results mark an important stage in the progress towards a return to full profitability and say that this improving trend has continued during the current year.

Full-year loss per 10p share is shown at 0.1p (2.06p), and again no dividend is to be paid—the last payment was a single 0.0325p net in respect of the 13 months to end-April, 1976, when a £406,000 pre-tax deficit was incurred.

The results of Eastwood Marine (Essex), in receivership, have not been consolidated in 1977-78 figures but full provision has been made for sums totalling £115,000 advanced by the group during the year.

In furtherance of the policy of disengaging from non-banking activities, the directors have agreed the sale of R. Fraser Securities for a nominal sum and a further provision of £150,000 has been made in respect of unsecured lending to it.

To meet this a similar amount has been transferred from the unallocated general provision, while the balance of the unallocated provision, now standing at £600,000, is available to meet any unforeseen contingencies, the directors add.

Midway rise by H. & J. Quick

WITH TURNOVER higher at £29.93m against £22.12m, pre-tax surplus of H. and J. Quick Group, passenger and commercial vehicle dealer, expanded from £449,558 to £669,088 for the first half of 1978. For all 1977, profits rose by 88 per cent to a peak £939,000.

First-half profit was struck after interest of £218,852 (£245,464) and subject to tax of £345,000 (£233,000), leaving net surplus ahead from £216,558 to £324,088.

Earnings per 10p share are 8.04p (adjusted 4.02p) and the interim dividend is effectively raised to 0.88p (0.8p) net. Last year's total was 1.85p, adjusted for a one-for-one scrip issue and a consolidation from 5p into 10p shares.

Centrovincial finishes with £264,000 loss

FOLLOWING A half-time loss of £9,000 against £52,000 profits, Centrovincial Estates ended the year to March 25, 1978, with a pre-tax deficit of £264,000, compared with a £259,000 surplus last time.

Net income from properties fell from £3.9m to £3.33m and the deficit was struck after lower interest of £2.48m (£3.08m) and £694,000 (£624,000) interest relating to certain developments in progress.

Tax took £194,000 (£235,000) and after a £297,000 transfer from reserve, equal to provisions relating to dealing properties less tax relief thereon, the loss emerged as £161,000 compared with a £24,000 surplus. Capital items transferred to reserve, net of credits, were £909,000 (£23,000).

Again no dividend is to be paid—the last payments totalled 1.385p net per 20p share in respect of 1973-74.

The surplus arising from UK operations for 1977-78 amounted to £462,000 (£881,000), while an overseas deficit of £726,000 (£622,000) was split as to: Australia £330,000, U.S. £238,000 and Europe £138,000.

A revaluation of all UK investment properties shows a net surplus over book values of about £3m, after allowing for any necessary provisions against UK development properties. From this is deducted the deficiencies arising from revaluations of properties and developments in Australia and South Africa of £0.3m and £1.2m respectively.

Group net assets per share, including the revaluations are shown at 145.4p (142.5p) per share.

At the year end, medium and short-term loans were reduced by £6m to £20.4m.

Alginate Inds. profit warning

Alginate Industries yesterday warned that its profits will be affected as a result of a strike at its major extraction plant at Girvan Ayrshire which has already suffered teething troubles with a new filter system.

The group, which extracts alginates from seaweed—used by food manufacturers and the textile printing industry—said that as a result of the stoppage and earlier difficulties it would not be able to meet production targets and some orders would be lost.

The group warned that profits would be affected. In the year to December 31, 1977 group pre-tax profits fell from £2.97m to £2.8m.

Alginate said that the Girvan plant had been strike-bound for two weeks by the stoppage involving members of the Transport and General Workers' Union.

Slough Estates expands in healthy UK market

AGAINST A background of very encouraging UK demand, particularly at Slough, for factories and warehouses, Slough Estates achieved further growth in the first half of 1978 with taxable profit moving up from £3,148,000 to £3,780,000.

Declaring an increased interim dividend of 1p (0.75p) the directors say they remain confident that the outcome for 1978 will exceed the peak £8.97m attained last year and forecast a maximum permitted final. Total payment for 1977 was 2.265p.

New building is in hand at Slough, Aberdeen, Aylesbury, Birmingham, Carlisle, Reading, Weston-super-Mare and Yate and construction has started on an office block of 14,700 sq ft at Watford for completion in the second half of 1979, the directors report.

The tax charge was £1.6m (£1.45m) leaving the net balance higher at £2.19m (£1.7m) for stated earnings per 25p share of 2.26p (1.83p).

ISSUE NEWS AND COMMENT

BTR rights to raise £24m—plans for dividend boost

FOR THE third consecutive year, BTR, engineering group, is making a rights issue, this time to raise £24.1m. Terms are one-for-seven at 283p compared with yesterday's 240p in the market, up 7p on the day.

Along with the issue comes a dividend forecast of a 30 per cent rise this year to 11p gross and half-year results (to June 30) showing pre-tax profits of £17.9m against £13.4m. The interim dividend is 5.5p.

Since the last rights issue in March 1977 the group's operations have shown substantial growth. In addition there have been several large acquisitions, including Andre Silentbloc and Allied Polymer in the UK and three recently announced purchases in the U.S.—Worcester Controls, Hamilton Kent and Lindsay.

The latest cash call brings the total raised by the three issues to £42m.

The cost of the Hamilton and Lindsay acquisitions was covered by cash of $9.8m (£5.3m) but the larger Worcester bid has meant BTR taking out loans of $43.3m (£23.3m).

About £9m of the rights proceeds will be used to repay part of the $43.3m loans while the remainder will be used for future expansion.

The rights document shows that on June 30 the company had outstanding borrowings of £59m and there was cash and short term deposits of £14.1m. Since then the loans relating to the Worcester acquisition have been arranged.

Half year figures show sales of £166.4m compared with £122.3m. Last year BTR made profits of £29m on sales of £240.7m.

The greatest increases were registered in Europe where sales jumped by 49 per cent to £120m and profits by 41 per cent to £13.7m. In the Western Hemisphere sales are 6 per cent up at £18.9m and profits up by 33 per cent to £2.8m. Turnover in the Eastern Hemisphere is higher by 22 per cent at £30.6m and profits are unchanged at £1.7m.

Had the three recent U.S. acquisitions been included profits would have been higher by £1m.

Sir David Nicholson, chairman of BTR Industries . . . 30% increase in dividend forecast.

For the year as a whole growth in pre-tax profits should continue to be satisfactory and future profits should also benefit from the employment of the proceeds of the rights issue.

The issue has been underwritten by Hill Samuel, brokers are Cazenove.

Dealings in the new shares start on September 4.

See Lex

Compensation stock issue

Some £67.38m of 9½ per cent Treasury Stock 1981 was issued yesterday as compensation for nationalisation of parts of the aircraft and shipping industries. This issue is being made in respect of the unquoted securities of Hawker Siddeley Aviation, Hawker Siddeley Dynamics and Austin and Pickersgill.

The issue will be at the rate of £100 of stock per £97½ of compensation.

Dealings start today.

Howden £2.4m cash call

Howden Group, the Glasgow engineering company, is proposing to raise £2.4m from shareholders by way of a rights issue.

Terms of the issue are one-for-four at 65p each. In the market the shares closed at 84½p.

The rights is conditional upon shareholders' approval for an increase in the authorised capital at a meeting called for September 15.

The directors state that the continued growth of the company's business both at home and overseas will require extra capital. Against this background they believe that an issue is desirable if the company is to maintain a "satisfactory relationship between stockholders' funds and borrowings."

They expect to pay a dividend this year of 4.7p per share—an increase of 15 per cent.

● comment

Howden is not giving much away as to why it is making this issue, but with a rise in its share price of more than a third since the preliminary results six weeks ago it appears to be taking advantage of the market. But evidently growth both at home and abroad will require financing and in particular the prospects in Canada for generator equipment look promising. In the short term the cash will be put on deposit. Last April's balance sheet showed borrowings of £12.7m and on the other side of the coin there was cash of £7.3m. Shareholders' funds amounted to £15.4m. However, the company takes in substantial progress payments and in the last accounts there was some £14.6m included in the creditors figure. Still profits growth this year could be more impressive than in the recent past and at 84½p the ex-rights prospective p/e is probably around 5½ while the yield is 8.7 per cent—not an expensive rating.

Cement—Roadstone near £9m. midterm

SALES OF Cement-Roadstone Holdings for the 28 weeks to July 12, 1978, increased from £68.64m to £82.82m and pre-tax profits were higher at £8.93m compared with £6.62m in the same period last year.

For the second half, the directors say the delay in granting a price increase already means that the results of the cement company will be inadequate, but they expect the non-cement manufacturing side of operations to record a good profit increase. The favourable trend in overseas operations is expected to continue.

First-half tax charge is £893,000 (£538,000) giving earnings per share of 6.06p against an adjusted 4.71p. The interim dividend is effectively raised from 1.17p to 1.52p—the previous total was equal to 2.964p from pre-tax profits of £14.6m.

The acquisition of J and W. Henderson, Scottish builders' merchant, cost £5.65m and 36.45 per cent was satisfied by the issue of 2.57m ordinary shares in CRH. Details of the deal, to take effect from August 11, were announced in June as was the purchase of Amcor Inc. in the U.S.

The Amcor acquisition is planned to take effect from November 1, 1978, and is subject to the approval of the shareholders of the parent company, Diversified Earth Sciences Inc., and to audit together with the consent of the appropriate regulatory bodies, the directors say.

See Lex

Allen Harvey & Ross

The discount house Allen Harvey and Ross is following in the footsteps of its competitors, King and Shaxson and Clive, by setting up fixed interest portfolio management services for private and institutional investors.

In the UK, the discount house's investment management subsidiary proposes to offer two services to private individuals with more than £10,000 to invest: one will concentrate on securing capital gain, while the other is designed to produce a high level of income (initially estimates to be 12 per cent). In the Channel Islands a new Jersey-based subsidiary—Allen Harvey and Ross Gilt-edged Fund—has been set up to produce income for both private and institutional clients. Here the minimum investment is £1,000.

The managers of the new services say that, while gilt-edged stocks will form the core investment for each, they will be supplemented as necessary by investment in local authority bonds, Treasury bills, and Sterling CDs, as well as cash deposits.

Weir holds £4.5m at midway but sees better second half

AFTER INTEREST lower at £1.26m, against £1.44m, Weir Group maintained taxable profit for the 25 weeks to July 23, 1978, at £4.52m compared with £4.53m last time.

As predicted at the annual meeting the incidence of contract completions should lead to improved results for the second half. The directors, therefore, expect the current year as a whole will show an advance on the record £8.98m profit seen for all 1977.

Turnover for the half-year by the engineering group was ahead to £87.54m (£81.38m). Tax took £1.8m (£1.9m) leaving earnings per 25p share 0.6p better at 10.6p, and the net interim dividend is raised to 1.8643p (1.694p). The final last year was 3.509p.

The result was achieved in difficult trading conditions, particularly for the group's foundries where profits were adversely affected by the lowest level of UK demand seen in the steel casting industry for several years.

The main engineering subsidiary, Weir Pumps, performed well and good progress was made by Weir Westgarth in its programme of desalination plant construction.

● comment

Unchanged pre-tax profits from the Weir Group are perhaps slightly disappointing although the company did indicate a better second half. Foundry profits have almost halved at £1m with demand for volume sensitive steel castings still low—the valve and earth-moving equipment industries have been the most depressed customers. Elsewhere the picture has been much the same as last time with the UK Polypac company suffering a further loss and Weir pumps on the back of buoyant export business, turning in profits of about £2.5m. Meanwhile, earnings from the desalination side reflect the higher work load and the anticipated completion of Middle East contract stages should provide much of the improvement in the second six months. Profits of about £10.5m look possible for the year but the group badly needs an overall recovery in demand for capital goods. Much of the recent investment has helped trim costs but there may not be much scope left here. At 125p the shares do not look over priced standing on a prospective p/e (based on last year's low tax charge) of 4.6 (against a sector average of just under eight) and yielding a prospective 7 per cent.

Davy Intl. orders at £1.24bn

THE CURRENT order book at Davy International is £1.24bn and prospects are quite good: Sir John Buckley, the chairman says, but the sluggish world economy continues to make the winning of contracts hard.

He points out in his annual statement that it will be the enterprise displayed in world markets that will determine the group's future success, and says this will require a presence through association in some further countries and, as opportunities allow, acquisition in others.

Despite the uncertainties there is every reason for believing that the company will continue to make good progress.

Of the order book, the engineering and construction division —which will be known as Davy International following the proposed change of Davy's name to Davy Corporation—accounts for £986m.

It contributed £13.8m (£13.4m) of the £25.4m (£18.78m) pre-tax profit reported for the March 31, 1978 year, with the non-UK companies, particularly those in Germany, doing less well. In Germany, demand for Zimmer synthetic fibre plants was highly depressed and as it is not expected that demand will be restored to former levels for some time, Zimmer and Davy Powergas of Cologne will in future operate as one company. Germany is now Davy's highest cost centre, but Sir John is confident the companies there will meet the challenge for higher levels of efficiency.

The UK companies are hoping for further successes in obtaining large contracts.

The equipment design and manufacture division—to be known as Davy Engineering Industries under the new two division regime—was expanded in the year by the acquisition of Herbert Morris and Head Wrightson. Foundries were the only trouble spot, and immediate prospects there remain depressed. Foundries will not earn satisfactory profits until manufacturing industry becomes more active, but Sir John says there is ample scope for improving efficiency.

At balance date fixed assets of the group stood at £53.09m against £41.43m, and net current assets at £47.13m (£32.98m), with bank balances, deposits and bonds comprising £73.89m (£69.32m) of the current asset total of £218.75m (£187.06m). On a current cost basis fixed assets are shown at £64.64m and net current assets at £48.15m, with the balance sheet total ahead from £99.84m to £114.51m.

The current cost profit is shown reduced to £21.67m by additional depreciation of £2.22m and cost of sales of £1.99m, offset by a £0.49m gearing adjustment.

Meeting, Duchess Mews, W, September 26 at noon.

● comment

Davy International exudes confidence about the future but at the same time strikes a cautious note about the immediate trend in the world economy. This slight contradiction may be explained by doubts about the rate at which the group will book new business, with the order load showing no growth in real terms during 1977-78. Still, Davy is optimistic about its prospects of gaining further large jobs in countries like Brazil and Venezuela, and is negotiating over a £30m project in China. Meantime several of last year's problem areas have been the subject of management attention, with the loss-making man-made fibres offshoot merged into the other German operations, while Head Wrightson has now been reshaped. At 284p the shares yield 5.8 per cent.

BIDS AND DEALS

Dixons Photographic withdraws from Holland and Belgium

BY CHRISTINE MOIR

DIXONS PHOTOGRAPHIC has pulled out of its £18m retail business in Holland and Belgium with the admission that the operation had not produced a reasonable return and profitability was worsening.

The company announced yesterday that it had sold the entire Dutch subsidiary—which ran 64 shops in Holland and a further 10 concessions in Belgium—to Holland's largest retail chain, Vroom and Dreesmann Nederland.

V and D is to pay £2.63m for the Dutch chain which has net assets of £1.56m and a property surplus on a recent valuation of £590,000. In addition V and D will assume responsibility for loan capital of £2.9m owed by the subsidiary to the group.

Yesterday, Mr. Stanley Kalms, Dixons' chairman, said that the sale would release some £5½m which would be used as general working capital for the group.

He admitted that the Dutch company had never produced a reasonable return since it was started five years ago. In 1977 profits from it were £348,000 but last year they dropped to £225,000 and he expected they would fall again this year.

In terms of turnover the Dutch company last year represented a third of Dixons' total overseas operations but only contributed 6 per cent of overseas profits. The remainder came from Dixons' sole distribution rights in Europe and the U.S. of the Chinon range of photographic and optical products.

An important element of yesterday's sale, Mr. Kalms said, was the agreement that V and D would have the exclusive agency rights to Chinon in the Netherlands. In this way Dixons would retain part of the profits from Chinon which is the brand leader in the Dutch photographic market, Mr. Kalms claimed.

Only 10 days before, Dixons had also admitted to problems in Westons the chemists which it took over in 1976. Profits at Westons have been steadily slipping and Dixons has now completely changed the management, and Mr. Kalms sees this as Dixons' only problem area.

However, "there is every indication that we have now found the real problem, weak management on the retail distribution side," Mr. Kalms said, "and we have tackled that dramatically."

Elsewhere the company was "going fairly well." Mr. Kalms said. Dixons would be opening 14 more photographic shops in the UK before the year end. The U.S. was doing exceptionally well and beginning to show meaningful profits for the first time, though the weakness of the dollar would have an effect.

Dixons is not the only retail group to have found the going rough in Holland. Only in May, W. H. Smith, the newsagent and bookseller, pulled out of its joint retail operation in Holland after losses running into "many millions of guilders" in its seven stores.

The previous month, A. G. Stanley Holdings reported losses of £100,000 from its three Dutch home decorating stores and announced the sale of two of them and the planned disposal of the third.

Both companies blamed the lack of buoyancy in the Dutch economy and a simple lack of sales.

BOARD MEETINGS

The following companies have notified dates of Board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available whether dividends concerned are interims or finals and the sub-divisions shown below are based mainly on last year's timetable.

TODAY

Interims: BBA Group, Boustead, Bridgewater Estates, Church Dorada, Ladbroke, John Lamb, Matthews Wrightson, Mixconcrete, Scottish Agricultural Industries.
Finals: Crouch Group, Linfood, Mills and Allen, Sobranie, Stoddard.

FUTURE DATES

Interims:—	
Garnar Scotblair	Sept. 4
Le Bas (Edward)	Sept. 5
Noble and Lund	Sept. 14
Northern Engineering Inds.	Sept. 13
Portals	Sept. 6
Prudential Assurance	Sept. 14
Revertex Chemicals	Sept. 4
Tricentrol	Sept. 11
Finals:	
Australian and Intnl. Trust	Sept. 13
Costain (Richard)	Sept. 7
Decca	Sept. 8
Diploma Investments	Sept. 5
Haggas (John)	Sept. 13
Saville (J.) Gordon	Sept. 5
Walker (Jas.) G'smith & S'smith	Sept. 13
Zetters	Sept. 5

CAI pays £3m for U.S. manufacturer

Cope Allman, the packaging, engineering, steel and leisure group, has acquired Sunbeam Plastics of Indiana for £3m cash in the group's first major move into manufacturing in the U.S.

Sunbeam specialises in the manufacture of child-resistant plastic fasteners for containers used by the chemical, pharmaceutical and toiletries industries.

Mr. Philip Case, group financial controller for Cope, said yesterday that the acquisition would extend the group's plastic container and closures activities and provide Cope with its first manufacturing capacity in the U.S.

Packaging interests account for around half group sales which in the year to July, 1977, rose to £146m.

Last year Sunbeam earned pre-tax profits of $336,056 (£173,000) but the company is forecasting profits of not less than $900,000 (£464,000) for the current year.

At the end of last year Sunbeam, which operates two factories, in Indiana and Florida, showed net tangible assets of $1.71m (£881,000).

Cope is paying around £2m out of its own cash resources with the balance to be met out of existing dollar loan facilities. Citibank NA, has advised Cope during the negotiations.

IBSTOCK—DETAILS OF U.S. PURCHASE

Ibstock Johnsen, the Leicestershire-based brick maker, yesterday dispatched to shareholders its letter detailing its first major purchase in the U.S.

The group completed its purchase of the Marion Brick Corporation, the sixth largest brick maker in the U.S. and a subsidiary of the Medusa Corporation of Ohio, on June 5 for a total consideration of $9m (about £4.9m).

The deal has been financed by two loans aggregating $9m of which $4m has been borrowed by Ibstock Johnsen from Midland Bank and has been used to subscribe common stock in a new wholly-owned U.S. subsidiary called Ibstock Corporation. The balance of $5m has been borrowed by the new subsidiary from European American Bank.

A pro-forma balance sheet, as at December 31, 1977, shows that the Marion acquisition would have increased group loan capital from £4.85m to £9.81m, and fixed assets from £18.2m to £30.6m.

The fixed assets of Marion, which include seven brick plants increasing Ibstock's capacity by 50 per cent, also include an undeveloped freehold site of some 240 acres at Sheffield in Illinois, have been valued at June 1, 1978.

In its last financial year ending December 31, Marion showed pre-tax profits of $1.78m, unaudited. For an audited five month period ending May 31, 1978 Marion has shown taxable profits of $505,000.

Erskine House leaves "Chorus Line"

Erskine House Investments is pulling out of its interest in one of the current top West End stage shows, "Chorus Line." The directors have entered into a conditional contract to sell Michael White Ltd. the theatrical and film production company behind the show, to Circle Investments, a Cayman Islands corporation, for £339,504 cash.

The sale is conditional upon certain Bank of England and exchange control consents and upon the approval of the trustees of Erskine's convertible loan stock.

Net asset value of Michael White at March 31, this year was £203,444 and pre-tax profit for 1977/78 was down from £81,189 to £23,592.

The Board believes that, having regard to the capital requirements of White's and the unpredictable nature of the profits of the industry, the sale is in the best interests of Erskine. The proceeds of the sale will be used as working capital.

On completion of the sale Mr. Michael White will resign as a director of Erskine.

Profit of Erskine itself for the year to March 31, was ahead from £179,796 to £250,849 before tax of £67,403, against £92,801. Turnover jumped £6.59m to £15.96m. Of this £12.74m (£8.12m) came from the bureaux de change, acquired in March, 1977, £3.19m (£3.17m) from the theatrical side and £30,171 (£70,780) from net dealings and other revenue.

The bureaux contributed £207,078 (£70,528) to profit and net dealings and other revenue £20,179 (£28,079).

Earnings per 25p share are stated at 7.09p (3.4p) before the loan stock conversion in September, 1977, and 5.92p afterwards.

The net total divinend is raised to 1.91072p (1.72p) per 25p share by a final of 1.25072p. After minorities, attributable surplus came out at £184,731 (£88,568).

Comparative figures include eight months of the bureaux de change business.

Michael White, which has been behind other hits such as Oh Calcutta!, the Rocky Horror Show and Monty Python and the Holy Grail, became a wholly owned subsidiary in 1974. Though it came to represent a large proportion of the parent group's turnover its profit record was erratic.

As known, Erskine acquired PPR Security Services in March this year from Empress Services (Holdings) for a total of £141,000.

WM. MOWAT

Shares of William Mowat, the property and wood treatment company, were not suspended on Tuesday, contrary to the report in yesterday's paper. Mowat has received an approach which may lead to an offer. Its shares rose 5p yesterday to 27p.

Opposition to Oliver Rix merger

A GROUP of small shareholders in Oliver Rix, the British Leyland dealer, is mustering opposition to the proposed merger with Manchester Garages, its Ford counterpart.

Mr. Harry Wakely of Blackwood in Gwent, who is spearheading the opposition, last weekend circularised shareholders owning 10,000 or more shares and now claims "verbal support" for his attempt to quash the bid from shareholders representing "approaching 10 per cent of the equity."

Mr. Wakely said yesterday that the dissidents proposed to hold a meeting next week.

Although the group's main aim is to keep Rix independent while it continues to recover profitability, it is also incensed at what it regards as the poor terms offered to Rix's shareholders by comparison with Manchester's.

In particular his letter asks why Manchester is offering its shareholders a double dividend this year only if the offer goes through. Mr. Wakely said that this indicated that the extra payment would come as a result of Rix's contribution to the new company's profits.

SHARE STAKES

Rothschild Investment Trust: Shield Trust, a subsidiary of N. M. Rothschild and Sons, now holds 1,911,692 ordinary shares and 1,287,124 3.5 per cent convertible cumulative redeemable preference shares.

Bifurcated Engineering: Britannic Assurance has bought 168,000 shares making total 848,000 (11.27 per cent).

Initial Services: London and Manchester Assurance Company and subsidiaries own 107,000 5.95 per cent cumulative preference shares (26.75 per cent).

Forward Technology Industries: Following the sale between June 13 and 26 by Estate Duties Investment Trust, Industrial and Commercial Finance Corporation now interested in 677,500 shares and Estate Duties Investment Trust in 205,833.

Bonser Engineering: N. Ashton Hill, a director, sold shares at 43p as follows in non-beneficial capacity as trustee: On August 18 Charles Ernest Turton and Norman Ashton Hill FB1 account sold 1,252,330 shares. Also on August 18, Norman Ashton Hill and Charles Ernest Turton FB2 account sold 950,707 shares. On August 21 Charles Ernest Turton, Norman Ashton Hill and Richard Charles Turton RLG account sold 276,393 shares. R. L. Greensmith, director, sold shares in which he held beneficial interest at 43p as follows: On August 21 Ronald Leivers Greensmith sold 215,620 shares, also on August 21, Mrs. Muriel Daisy Greensmith, wife of R. L. Greensmith, sold 157,000 shares.

Ben Williams and Co. — Miller, Rayner and Haysom has bought 7,500 shares making total 95,000 (8.6 per cent).

Bank of Scotland — Kuwait Investment Office has acquired interest in further 12,500 shares making total 1,991,500 (6.175 per cent).

Sun Life Assurance Society — Kuwait Investment Office has bought 25,000 shares making total interest 5.05m (8.76 per cent).

Bridgend Processes — A. P. Stirling, director, has sold 76,104 shares. London Trust Company, following purchase of 300,000 shares and acceptance of recent rights isuse, now owns 3m shares.

Automotive Products—Camway Investments has bought 100,000 shares. E. G. Barratt, director, is a director of Camway.

Lilleshall Company—Nominal Ltd has bought further 32,000 shares making holding 132,500 (8.3 per cent).

Lesney Products—Temple Bar Investment Trust has bought further 20,000 restricted voting ordinary shares and is now interested in 255,000 (12.75 per cent).

MY Dart—S. Marks, director, has sold 25,000 shares. Maceville, of which S. Marks is a director, has sold 25,000 shares. M. E. Lloyd, director, has sold 2,000 shares.

Expanded Metal—Britannic Assurance has increased its holding by 25,000 shares to 1,245,000 (6.09 per cent).

Hume Holdings—N. E. H. Taylor, director, has sold 14,000 "H" ordinary shares in the ordinary course of his investment policy.

Currys—A trust of which D. Curry, chairman, is trustee, sold 59,350 shares between June 27 and August 7, consideration £114,297.

Francis Industries—Temple Bar Investment Trust has an interest in 450,000 shares (6.18 per cent).

Godfrey Davis — Rothschild Investment Trust is beneficial owner of 2,195,000 shares (18.1 per cent).

Usher Walker—Daily Telegraph has acquired 49,000 shares making total holding 378,500 (17.78 per cent).

Throgmorton Trust — D. E. Franklin, director, on August 15 sold 100,000 shares at 82⅞p and on August 23 further 100,000 at 83¼p from non-beneficial holding.

Howard Tenens Services—E. C. Morris, director, bought 10,000 shares on August 18. P. E. Morris, director, bought 17,250 on August 18. R. Grier, director, sold 50,000 on August 24.

DIVIDENDS ANNOUNCED

		Current payment	Date of payment	Corresponding div.	Total for year	Total last year
BTR	int.	5.5§	Nov. 27	4.2*	—	8.4*
Cement Roadstone	int	1.52	Oct. 7	1.17*	—	2.98*
Erskine House		1.25	Oct. 20	1.72	1.91	1.72
Gripperrods		2.99‡	Nov. 1	1.93	4.64	3.58
Grovebell Group		0.5	Oct. 16	0.5	—	1
London Utd. Inv.	int.	2.5	Oct. 19	2.1*	—	4.21*
Lonrho	int.	2.41	Oct. 3	2.33	—	6.55
Nu-Swift	int.	0.73	Oct. 2	0.66	—	1.57
Pearl Assurance	int.	3.85	Oct. 13	3.85	—	12.59
H. & J. Quick	int.	0.58	Oct. 2	0.8*	—	1.65*
Slough Estates		1	Oct. 16	0.75	—	2.27
Thomas Robinson	int.	0.82	Oct. 12	0.74	—	3.42¶
Thurgar Bardex	int.	0.3	—	0.3	—	0.68
Weir Group	int.	1.86	Jan. 8	1.69	—	5.2

Dividends shown pence per share net except where otherwise stated. * Equivalent after allowing for scrip issue. † On capital increased by rights and/or acquisition issues. ‡ Gross throughout. § 3.5p final forecast. ¶ Includes additional 0.0401p for tax change.

MINING NEWS

Sea-bed mining cross-currents

BY PAUL CHEESERIGHT

PROSPECTS FOR negotiating an international regime to control sea-bed mining by the end of the decade have slipped further away over the last ten days. No perceptible movement to ease the deadlock between the developed and developing countires at the United Nations Conference on the Law of the Sea has been discerned.

The seventh session of the Conference reconvened in New York at the beginning of last week, but the delegates from more than 140 countries have so far not been able to push the level of agreement beyond that reached in Geneva during April and May.

Sources close to the Conference described it variously as "having entered a holding pattern" and as "redrawing its normal battle lines."

The battle lines have hardened around different ideas and techniques for interpreting and applying the universally accepted notion that the wealth of the sea-bed—contained in manganese nodules holding nickel, manganese, copper and cobalt—is the "common heritage of mankind."

The problem is how to reconcile the needs of the private sector groups from the developed world, those who have the resources and technology to exploit the sea-bed, with the developing countries' demands for rigid international controls.

The position has been further complicated by the fear of mineral producers in the developing world that sea-bed minerals will depress the prices of land-based products, despite the facts that even under the most favourable timetable sea-bed mining on any but an experimental scale is several years away and that generally its costs are likely to be at least as high if not higher.

Talks in New York are concentrated on three negotiating committees:

● The first deals with sea-bed mining as such and involves issues like the transfer of technology from the private groups to whatever organ is established by the Conference to mine for the UN and the length of time any sea-bed treaty would obtain;

● The second covers financial arrangements for mining, involving charges on the private sector companies and the payments they would have to make to an International Sea-bed Authority;

● The third deals with this Authority—how it should be composed and what procedures should be adopted in the making of decisions to control the exploitation of the sea-bed.

A reiteration of demands that this Authority should exercise tight control over mining came yesterday in Manila where developing countries attending a conference of the International Law Association argued that uncontrolled mining of the sea-bed would bring metal prices down.

The U.S. has meanwhile maintained that there is no treaty and no customary international law which prevents a state or its nationals from using the resources of the sea-bed outside areas of national jurisdiction at the present time.

Mr. Elliot Richardson, the U.S. chief negotiator at the Law of the Sea Conference, denied that legislation currently before Congress was either contrary to international law or damaging to the Conference.

He was responding to charges made by Fiji, on behalf of the developing countries, that as the resources of the sea-bed were the heritage of mankind they were not subject to appropriation or the exercise of national sovereignty.

Mr. Richardson refused to agree to defer mining until an international treaty had been agreed, in face of the need for minerals and the need also to proceed with research and development. But a spokesman later pointed out that it would be several years before any permits for commercial mining were granted.

A U.S. Bill to regulate national sea-bed mining groups has passed through the House. Another has recently emerged from the Senate Foreign Relations Committee.

Although a final U.S. Bill is still some way away, the legislative activity in Washington has prompted a movement among EEC countries to work towards national laws to cover sea-bed mining.

Quebec doubts about asbestos takeover

There is some confusion at Asbestos Corporation, the second largest fibre producer in Canada, about the intentions of the Quebec Government for a takeover. Sources at the Corporation cannot confirm the statement last week by Mr. Jacques Parizeau, the provincial Finance Minister, that takeover negotations will start shortly, reports Robert Gibbens from Montreal.

Asbestos Corporation is 34 per cent controlled by General Dynamics of the U.S., which does not want to sell. The sources said that nothing had changed for several months and that there had been no word either from the Quebec Government or from General Dynamics about impending negotiations.

The Government announced its intention to takeover the company several months ago. It has received a valuation of the business, prepared for it by Kidder Peabody, the New York investment house.

However, it is thought in the industry that the Government may be having second thoughts about its position despite Mr. Parizeau's statement that it intends to go ahead with a takeover. It is believed that the price for a takeover might be so expensive that the Government would be prepared to settle for participation.

Industry analysts point out that a Government takeover of Asbestos Corporation would create no new jobs. If the Government did relax its stand on a takeover then it might then participate in Brinco's Abitibi asbestos project, which would be a large job creator. Meanwhile General Dynamics is content to stretch out the pre-negotiation period.

CONSOLIDATED TO MAKE MOVE

Consolidated Mines, the Philippines group, is reported to be planning a takeover of operations at its refractory chromite deposit in Zambales Province, reports Leo Gonzaga from Manila.

The property is presently operated by Benguet Consolidated under contract to Consolidated. The reports have been neither confirmed nor denied by the parties involved, but have gained currency because of recent earnings performances.

Consolidated gains most of its income from the chromite property although it has a copper mine which came to production at below planned capacity last year. During the 1978 first half its net earnings slipped to Ps 21.06m (£1.48m) from Ps 23.8m in the same period of 1977.

On the other hand Benguet's net profits in the 1978 first half at Ps 48.45m (£3.4m) were 64 per cent up on the 1977 first half. Although the increase was primarily due to an improved performance by an engineering subsidiary, a substantial portion of earnings came from the chromite operations. The company's gold operations incurred a loss.

In spite of the fact that Benguet's contract with Consolidated does not expire until 1981, it is understood that Consolidated is seeking either an early termination or a revision of its conditions. At present Benguet receives 25 per cent of the excess of revenue over disbursements, including capital expenditure.

The Marketing Scene

EDITED BY MICHAEL THOMPSON-NOEL

Skol tonic for Masius

IN THE FIRST significant account change of what could prove a record autumn for hirings and firings, Allied Breweries has switched its £2m Skol lager account out of BBDO and into D'Arcy-MacManus and Masius, writes **Michael Thompson-Noel.**

Masius has had a quiet year to date, but joint managing director Mike Johnson says the Skol gain has proved an "enormous boost" to morale and that the agency is on target for 1978 billings of around £59m.

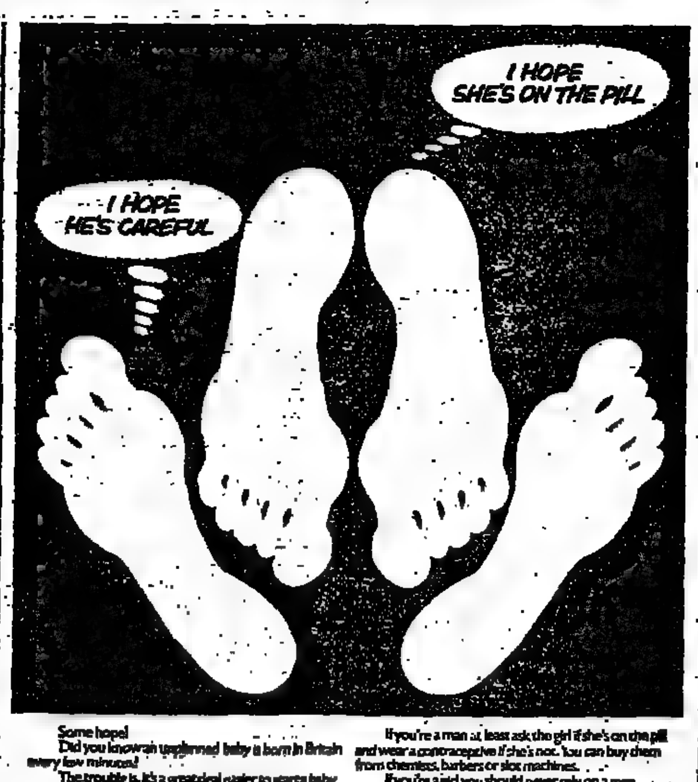
Things are hotting up in lager. Total MEAL-type spending on Skol in the 12 months to March 31 was £958,900 (MEAL does not log posters) compared with Harp's £960,200 via Ayer Barker Hegemann, Carling's £1,407,700 via McCann-Erickson, Carlsberg's £697,500 via KMP, and Heineken's £1,258,600 via Collett Dickenson Pearce.

Masius, formerly known as the grocers of St. James's Square, will next year handle no less than an estimated £8m worth of drink advertising, including Babycham, Harveys, Grants of St. James, VP wines and Allied's other larger brand, Lowenbrau, now in test in the South.

The Skol loss is particularly painful for BBDO. Although the account is already worth £2m., significant increases in advertising expenditure are expected later on.

● KELLOGG'S IS BANKING £750,000 on the launch, starting tomorrow, of Kellogg's Extra, its first-ever hot cereal. It marks the company's entry into the £9m instant hot oat cereal market. By next year Kellogg's aims to capture 25 per cent of a market at present led by Lyon's Ready Brek. Kellogg's Extra is the company's third national product launch this year, following Fudge Mix and Cracklin' Bran. Advertising is being handled by Leo Burnett, not Kellogg's main agency, which is JWT.

● DUNLOP SEMTEX (Retail Division) has appointed Dorland Advertising. The account is expected to bill more than £250,000 next year. Dorland has won 14 new accounts this year, including Liptons, Caterpillar and Toshiba. Semtex was previously with Roe Downton (Gloucester).



Some hope!
Did you know an unplanned baby is born in Britain every few minutes?
The trouble is, it's a great deal easier to start a baby than you think, especially if you take chances.
A man takes a chance if he just hopes the girl is on the pill or it's 'safe'.
A girl takes a desperate chance if she just hopes he'll withdraw. (A man sometimes promises to withdraw and then doesn't. And even if he does withdraw, you can still get pregnant).
If you're a man at least ask the girl if she's on the pill and wear a contraceptive if she's not. You can buy them from chemists, barbers or slot machines.
If you're a girl you should never rely on a man. You can get advice and free contraceptives from doctors or Family Planning Clinics—whether you are married or not.
You'll find clinics listed in your telephone book.
The Health Education Council

"Marketing techniques exist: everyone is affected by them to some degree. It is illogical and inefficient not make use of those which can be adapted to the social marketing of contraception." So says Wendy Smith, author of "Campaigning for Choice," a review of the role of media-based publicity in providing contraception which the Family Planning Association published this week (£1).

According to the author: "Responsible publicity for birth control, using everyday language and putting contraception into the context of sex, love and family security, should be allowed on TV, radio and in all newspapers"—a delicate reference, presumably, to the absurd coyness with which some newspapers have in the past refused to carry family planning ads.

The report cites two major barriers. First, the "lingering pseudo-fastidiousness of the IBA, London Transport and others" whose restrictions prevent advertisers from effectively using the mass media. Second, the campaigns themselves, which in the past have often wasted money and effort "simply because of the sponsors' naivety, distate for commercialism or plain lack of adequate funds."

There is absolutely no room for fastidiousness in the author's book. According to her, the most successful campaigns of the past were those which related directly to the every-day fundamentals of sex, love, family and security.

The two-pairs-of-feet advertisement shown here was part of a £75,000 Health Education Council campaign run last year via Saatchi and Saatchi—more accurately, run partly, for both the Mirror and the Sun refused to have any truck with it, even when offered two alternative visual treatments. However, it did appear in a range of teen magazines, some of them owned by IPC.

One of the case studies in the report looks at the HEC's £100,000 cinema campaign promoting awareness of contraception services available under the NHS. The 45-second ad was shown in 1,400 cinemas in 1975-76. The cinema was chosen as the best medium for communicating with a young, sexually active, mainly unmarried audience. This campaign and its attendant evaluation, says the FPA, was arguably the best designed and funded of its kind. As it happens, tests indicated that the campaign had no effect on awareness of NHS contraceptive services, though the awareness level seems to have been remarkably high to start with.

M.T.N.

INDUSTRIAL MARKETING

Building a disposable business

WINSTON FLETCHER describes the success of Kimberly-Clark's first major national industrial advertising campaign

INDEFATIGABLE trades unionists will be mortified to learn that employers are not legally required to supply toilet paper for their workers. They must, however, under Acts of 1961 and 1963, provide "soap and clean towels or other means of cleaning and drying." With the soap and towels must go a legally specified number of wash basins: approximately one per 10 male personnel, more for females (a fine example of super-abundant detail inadvertently leading to discriminatory legislation).

The celebrated Health and Safety at Work Act (HASAWA) demands that every working environment should be "so far as is reasonably practical, safe and without risks to health." HASAWA's minutiae insist, for example, that all floors should be cleaned at least once a week.

In spite of all this concerned legislation, a small survey carried out last year for Kimberly-Clark's Industrial Division suggested that a massive 41 per cent of U.K. office and factory workers are dissatisfied with the standards of hygiene and cleanliness at work; and 48 per cent feel them to be inferior to those at home. The main causes of complaint rest in the washroom: dirty washbasins and toilet seats and—despite the legislation—unacceptable soap and hand drying facilities. Thus it was less than astonishing that the same survey showed that 21 per cent of factory workers believe their bosses to be wholly unconcerned about employee welfare in these areas.

It was against this legislative and attitudinal background that Kimberley-Clark's Industrial Division began, some two years ago, to plan its first major national advertising campaign. KC is the leading UK manufacturer of disposable hygiene products, and has been supplying Hi-Dri disposable paper towels to industry since the 1930s.

It was not, however, until the 1960's that the parent company put significant resources and thrust into its industrial marketing operation. To its Hi Dri towel range were added Kleenex hospital products, toilet tissue, and Kimwipes disposable wipers—with the result that over the last decade its volume sales to industry, commerce, government and hospitals have grown by more than 300 per cent on a not insignificant base. (Sterling sales have increased by an inflation-geared 1,000 per cent plus.) Chicken-and-egg-like, the growth has both been caused by and resulted in an ever widening target market.

Probably the most fundamental single difference between consumer and industrial marketing is that whereas consumer products are bought by individuals for their own (or their families') use with their own (or their families') money, industrial purchases typically involve the spending of other people's money on products which still other people will use. Thus each industrial buying decision is inherently more complex and inevitably involves far more people than a consumer buying decision.

From its start, KC Industrial Division addressed its marketing efforts to the multiplicity of people involved in purchasing its products—the Decision making Unit, as Aubrey Wilson first defined them in his now classic *The Assessment of Industrial Markets.* A wide variety of trade and technical media were used, backed up with direct mail and product card advertising. Broadly using direct mail and product cards generated inexpensive inquiries for KC's sales force to follow up, whereas the trade and technical advertising's prime function was to increase prospective customers' awareness of KC Industrial Division and its products.

As the business grew, the people directly or tangentially concerned in purchasing the company's products increased, as it were, geometrically, via the Decision Making Units involved.

Snowballing growth meant that by 1976, when at the agency we came to plan the following year's campaign, our estimate of the buyers, specifiers and decision influencers involved in purchasing KC products was 545,000, to whom could be added an unquantifiable number of indirect decision-influencers.

Approximately 2,000 trade and technical magazines are published in the UK and 750 of them could have made a case for carrying KC's 1976 advertising to some periperal part of that wide target audience. A cost-per-thousand analysis cut the schedule to those 60 publications which covered the majority of buyers, specifiers and influencers most economically. Nevertheless, a single whole page in all 60 would have cost £14,700 (with huge concomitant artwork and block changes).

By comparison, computer analyses showed that a tight schedule of six national magazines, including the Sunday supplements, would reach approximately 80 per cent of the target at a gross insertion cost of £6,600 and with significantly reduced production costs. In addition to which, the use of major national media would generate spin-off-advantages in terms both of sales force enthusiasm and of covering the indirect Uncle Tom Cobbley purchase influencers who could never possibly be reached by trade and technical magazines.

The arithmetical justification for using national consumer magazines, while crucial, could only make sense within the context of a total campaign promoting the benefits of all Kimberley-Clark products to the publications' heterogeneous audience. This was the antithesis of the very specific trade and technical advertising upon which KC had built its growth. The narrow readership of most UK trade magazines allows advertisers to define the creative content of their advertisements with considerable precision (though surprisingly few industrial advertisers seem willing to invest the time, trouble and cost necessary to do so).

Each of the KC advertisements used was therefore pre-tested and amended as necessary in the light of the findings. Before the campaign began an awareness check showed that only 4 per cent of the target market associated KC with "Health and Hygiene at Work." Follow-up research after the first burst of the campaign showed this awareness level to have been quadrupled.

More to the point, in a less than booming economy with unemployment—which directly reduces the usage of KC's products at work—running at over 1m throughout the year, KC Industrial's 1977 sales showed substantial growth above the 1976 record levels. Hardly surprising then that the national Press campaign has been continued and developed along lines gleaned from continuous research and testing.

All of which sounds like an unmitigated paeon of praise to the use of national consumer—as against trade and technical—publications for major industrial advertising. It must therefore be stressed that unlike some other leading industrial marketing companies (Dexion and Colt for example), KC used trade and technical publications almost exclusively and extremely successfully for over a decade; and these publications are still used to convey, most cost-effectively, specific communications to particular audiences.

Finally, it is incumbent upon the advertising agency to mention that the use of national media for industrial advertising can only make sense within the context of a clearly defined total marketing and communications strategy: that at least a morsel of KC Industrial Division's success has been due to its exceptionally effective sales force, and even, perhaps, to some small extent, to Kimberly-Clark's development of the right disposable products to meet the ever more stringent demands of its customers, their workers, and last but not nowadays least, their lawyers!

Winston Fletcher is managing director of Fletcher Shelton Delaney.

New products as a way of life

BY PETER KRAUSHAR

THOSE WHO are cynical about the value of new products and find it difficult to launch any should study the new product development performance of the frozen food companies, for whom new products are absolutely vital in their need to move from commodity lines such as frozen vegetables to added value convenience products.

Birds Eye has recently met success with China Dragon, cheesecake, and many other frozen cakes. United Biscuits recently surprised the industry by announcing a launch in Southern in the retail rather than the catering area and, if the initial results are satisfactory, it is certain that a considerable new product development programme will follow. Findus, which had 15 per cent of frozen food retail sales in 1977, has also paid much attention to new products and claims that as much as a fifth of its current turnover is in products launched during the past five years. The activity has undoubtedly been helped by the retail trade which has increased enormously its refrigerated space and which is keener on new products in frozen foods than in any other grocery market.

Against this background, Findus has organised itself by having, under the marketing director, a new products marketing manager responsible for development activity, while the existing brands marketing manager looks after current business. The former, Peter Trimingham, has the task of seeking and evaluating new opportunities, carrying out the relevant planning, developing the products, implementing the planning and launching new products into test market or nationally.

Findus continually seeks many sources for new ideas. It operates in 49 countries and makes a point of having an up-to-date dossier on new frozen food products all over the world. Thus it felt that the French liking for crepes could be adapted to the UK and launched in 1973 a range of Crispy Pancakes which in 1977 had a sales volume of £5m at msp.

In general there has been a search for new and different prepared foods of all kinds; the trick, as usual, is to find the right balance between the different (possibly foreign) and the familiar (traditionally English).

Findus has developed the Something Special range, which was worth £4m at msp in 1977; it consists of lasagne, cannelloni, rigatoni, chicken Espagnole (all somewhat Anglicised), while other recent new products include much more prosaic markets such as toad in the hole, Cornish pasties and cottage pie. They sell because they are convenient as well as of good quality.

Another ambitious development is that of Findus Calorie Counters. Findus carried out three years of consumer research into slimming and concluded that there was a large potential market: 50 per cent of adults are over-weight and 25 per cent claim that they do something to slim.

Technical News

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

● RESEARCH

Magnet for high field studies

OPERATED AT close to absolute zero temperature, a superconducting magnet, designed and built by Thor Cryogenics of Oxford and destined for the University of Geneva in Switzerland has been repeatedly tested at the high magnetic field level of 155,000 Gauss. The magnet is wound with the filamentary niobium-tin superconductor invented and further developed in the UK by British industry supported by the Department of Industry and the Atomic Energy Authority.

In designing and building the magnet, which weights only 100 pounds but contains 12 miles of superconducting wire, the Thor engineers led by Dr. David Raynor supported by magnet specialist Francis Brown had to design to contain magnetic forces of some 60 tons and circumferential stresses, on a conductor of only 0.4mm diameter, of over 25,000 psig.

When fully energised, the magnet, which has a contained energy of 150,000 Joules, can be maintained at its full field without an external power supply because of the zero electrical resistance property of superconductors. This is to be compared with the continuing power requirement of several MW by a similar, water-cooled magnet wound with conventional materials.

The stainless steel former and the electrical insulation had to be designed to withstand temperature changes from just under 100C, the temperature at which the niobium-tin superconductor is metallurgically formed in the wound state, to −269C, the temperature at which the magnet normally operates. To avoid possible conductor fracture under either differential contraction or magnetic field stress (niobium-tin is extremely brittle) a vacuum impregnation process with an appropriate thermosetting resin also had to be devised.

Development work is proceeding, world wide, on the metallurgy of superconducting materials to sustain magnetic fields as high as 600,000 Gauss, and the present magnet is to be employed in this research by Professor Fischer at the University of Geneva.

The niobium-tin superconductor used by Thor in the construction of this magnet has intrinsic thermal and magnetic stability and is produced in a wire form of circular or similar cross section. These properties are of extreme importance in that they allow for the full mechanical support of the winding to contain the extremely high forces generated when the magnet is first cooled and then energised.

Thor Cryogenics, Henley Road, Berinsfield, Oxford. 0865 340601.

● ELECTRONICS

Voltage to frequency

INTRODUCED by National Semiconductor is a new family of voltage to frequency converters with a guaranteed maximum non-linearity of 0.01 per cent at 10 kHz.

The devices, designated LM 131, can be operated in either direction (v to f or f to v) and from a single power supply that can lie anywhere between four and 40 volts.

The standard device has a gain temperature coefficient that will not exceed 150 parts per million per deg. C and is typically 30 ppm/deg. C.

The premium grade devices have a guaranteed TC of 50 ppm/deg. C maximum and would be used in analogue to digital conversion, precision frequency to voltage conversion, long-term integration and linear frequency modulation.

National Semiconductor is at 301, Harpur Centre, Horne Lane, Bedford MK40 1TR (0234 211262).

● AUTOMATION

Retrieval of many parts

AT ONE of the key plants involved in the production of the "Tornado" multi-role combat aircraft at the Preston works of British Aerospace, a fully automated system for storing and retrieving small parts is now in operaton. Called Conserv-a-trieve, the new handling system was built and installed by Vickers Automated Systems Division, PO Box 44, Swindon, Wiltshire (0793 82 3241).

The fully-automated system has replaced, and combined into one, two existing stores previously in separate locations. The vacated floor area amounted to 10,350 sq ft—the new automated store occupies an area of 4,180 sq ft, a saving of nearly 60 per cent.

Four of the newly-introduced machines handle a total of 22,000 parts for the Tornado fighter, and a further 10,000 standard parts for other British Aerospace aircraft, such as the Jaguar tactical strike fighter, the Lightning fighter and the Provost jet trainer.

The components range from bulk-head frames down to the smallest rivets. The largest is 42 in x 15 in high and the weight limit is 300 lb. The entire store consists of about 6,000 containers, 6, 9 and 12 in high, and the largest size of bin can hold parts up to 18 in in height.

The machine consists of facing banks of storage containers which rise as high as the building allows. An electronically-controlled mini-load stacker runs between the banks and is directed to the required bin position by an operator using a simple keyboard which has a five figure location number.

According to the co-ordinates entered on the keyboard, a platform on the stacker travels to the appropriate vertical position and the stacker itself to the horizontal. An extraction device pulls the container on to the platform for delivery to the picking station.

The average time taken to retrieve and return a container is 47 seconds, and the current transaction rate is estimated to be 1,140 operations per man per week, compared with the old storage rate of 972 per man/week—an increase of 17 per cent per man.

Tailor-made industry controllers

DEVELOPED for control and automation applications in industry, the Vaughan 4M System offers an extended range of black boxes based on the Texas 16-bit 9900 chip. These compatible modules interface either to a memory highway, or to a simple multiplexer highway in the same crate.

The system can cater for up to 126 channels of input and output, using extension crates. The equipment can withstand 0 to 55 degrees C and up to 95 per cent humidity.

Input/output drives include digital input and output with a variety of interface options giving full optical isolation suitable for noisy plant environments. A communication unit allows interfacing to equipment such as terminals, printers, VDU's, data links, etc. that use the V24 (EIA) or 20 mA current loop interface standard with speeds up to 9600 bauds. Analogue modules are available for both input and output. Special units include a watchdog system, and a telemetry device developed to use the CEGB standard procedure. RAM or PROM memory can be chosen to suit the application up to 32K in total, and floppy disc drives can be provided to give a back-up storage where required.

Systems installed or on order, include telemetry (substation control), compensated weighing, conveyor control, plant simulation, railway signalling and flapboard display.

Application programs are provided by Vaughan in PROM form, alternatively a module is available to plug into the multiplexer that allows customers to condition or copy their own PROMs. Built-in test programs in PROM are incorporated in all systems which, in conjunction with a Control and Monitor panel, allow first line maintenance to be carried out by trained, but unskilled, staff.

Vaughan Systems and Programming, Amwell End, Ware. 0920 2282.

● OFFSHORE INDUSTRIES

Works deep under the sea

A SUBMERSIBLE jet pump system which can be suspended from a vessel or stand on the sea bed is introduced by Alluvial Mining, Northgate House, 2 High Pavement, Basildon, Essex SS14 1EA (0268 27382).

Divers can use the jet pump dredge in underwater clearance, maintenance, trenching and offshore mining operations. It consists of a tubular frame within which are mounted an electrically driven high pressure water pump, mixing chamber, diffuser, 18-inch stilling tube and suction and discharge ports. Weighing about 1.5 tons, it can easily be handled by a 5-ton derrick.

The system can be used in depths down to 1,000 feet, can handle particles up to 6 inches in diameter, and has a maximum designed output of 60 tons an hour of free flowing sand with zero elevation when fitted with a 100 feet flexible suction pipe and a 100 feet discharge.

The jet pump has a mild steel body with wear resistant materials for the mixing chamber and diffuser to permit such abrasive materials as sand and gravel to be dredged. It is designed to allow 6-inch particles to be passed and incorporates a hatch so that blockages caused by irregularly shaped objects or entrained trash can be easily removed underwater. Similarly, the stilling tube has a stainless steel screen to prevent entry of over-size trash.

Two suction points are provided; one has a vacuum adjust to regulate production and prevent collapse of the hose line. In addition, a take-off point for a remote jetting lance is provided so that divers can break up compacted material.

The first production unit is being supplied to a Scottish-based offshore maintenance company and will be used for offshore maintenance tasks in the North Sea.

A unit is currently operating in the North Sea in 600 feet of water on a pipeline maintenance contract removing silt from a trench prior to the replacement of a damaged section of oil pipeline.

● MATERIALS

Aids diesel-engine to run in frost

LOW TEMPERATURES create problems in diesel engines that result in higher running costs. The fuel "gels" and this can cause blockages and reduces the efficiency of the engine, simultaneously increasing the volume of fumes emitted through the exhaust.

Chalbar, a British company that specialises in the formulation of products to improve many types of combustion for the manufacturing and transport industries, is launching a product — Econosol Auto-D Wintergrade — that helps to maintain the efficiency of diesel engines even in the coldest winters. It contains compounds that inhibit the growth of large crystalline wax formations in fuel oil that are the root cause of blockages at temperatures below freezing. This makes it possible for engines to function at high efficiency at temperatures below minus 18 degrees C.

Exhaust smoke emission is cut down and the corrosive action of sulphur trioxide is almost completely eliminated. There is a reduced deposition of hard carbon and maintenance costs are reduced Chalbar asserts. By preventing oxidation and polymerisation, the diesel fuel is stabilised and the formation of gums and resins in the fuel pumps and lines is inhibited. Ignition delay is reduced, resulting in complete combustion of the fuel. In this way a smoother power generation is provided and economies are made in fuel consumption.

For further details of user experience: Chalbar, 247-249 Watling Street, Radlett, Herts WD7 7AL. Tel.: Radlett 3233.

Coating to cut the hazards

A GRAPHITE water-borne paint with anti-static properties, believed to be the first of its kind, has been developed in the wood products section of International Paint's laboratories where it is now being manufactured.

The coating is already being used on the inside of phenolic impregnated fibreboard covers for the backs of television cabinets to prevent the build up of static electricity. The electrical specification called for a resistance of less than 100 ohms between two points 14 inches apart.

The inclusion of fungicides ensures that the paint does not deteriorate during storage or after application.

The paint is applied by spraying and is available in 25 or 205-litre packs. This material can either be air dried or force dried for 10 minutes at 120 degrees C.

Although it was originally formulated for use in the television industry, the company envisages wider applications for the coating where its special anti-static properties could be put to good advantage.

More from IP-IC, 380 Richmond Road, Kingston-upon-Thames, Surrey KT2 (01-546 1234).

INTERNATIONAL FINANCIAL AND COMPANY NEWS

NORTH AMERICAN NEWS

Japanese stake for Data General

WESTBORO, August 30

DATA GENERAL has reached agreement in principle with shareholders of Nippon Mini-Computer of Japan under which the U.S. company will acquire a 50 per cent interest in Nippon. This will be in exchange for granting it an exclusive licence to manufacture and sell Data General computer products in Japan.

Nippon will also be licensed on a non-exclusive basis in certain other countries in the Far East, including India, China, North and South Korea and the Philippines and will receive licences of new Data General computers on an ongoing basis for a 10-year period subject to automatic renewal upon mutual consent of the parties.

Completion of the transaction is subject to necessary approvals by various Japanese governmental authorities and certain rulings from the Internal Revenue Service as to the U.S. tax consequences to Data General of the transaction.

Nippon's net sales for its fiscal year ended March 31 were about $21.4m.
AP-DJ

Chrysler looks for 10% rise in new car sales

BY JOHN WYLES

NEW YORK, August 30.

CHRYSLER TODAY forecast a recovery in demand for its vehicles during the 1979 model year and committed itself to meeting high standards of quality and workmanship. Sales of new cars are expected to rise about 10 per cent and help boost Chrysler's sagging share of the U.S. market from about 13.5 per cent in the current model year to 15 per cent.

The company today unveiled its new 1979 models and sought to present a picture of a vigorous manufacturer confident of meeting increasingly difficult challenges. Senior executives are clearly anxious to counter the impression of growing weakness brought about by heavy financial losses, a declining market share in the U.S. and the recent sale of its European operations to Peugeot-Citroen.

The most important features of the model range, which will go on sale at the end of next month, are redesigned, more fuel-efficient, full-sized cars, new two-door versions of the Chrysler front-wheel-drive small cars, the Omni and Horizon, and a new front-wheel-drive model from Chrysler's Japanese associate, Mitsubishi.

Chrysler claims that part of its sales weakness this year was attributable to its inability to compete with redesigned full-sized cars from General Motors and Ford. But it adds that its new Chrysler New Yorker, Chrysler Newport and Dodge St. Regis should bring its share of the full-sized car market up from around 3.5 per cent to 7 per cent.

These new cars are considerably smaller and more lightweight than their predecessors so as to meet the Federal Government's increasingly stringent fuel economy requirements. Chrysler claims that the new full-size models are 37 per cent more fuel efficient than the 1978 models and return 4.7 miles more to the gallon.

The redesign of this model range represents a portion of the $7.5bn which Chrysler expects to spend by 1982 in the development of new vehicles. The huge task of raising this money, which is double the company's normal investment rate, was an important factor in persuading the company to divest its European operations.

Chrysler shares General Motors' optimism about the outlook for car and truck sales and the company's executive vice president for North America, Mr. R. K. Brown, forecast that the 1979 model year would be at least as good as 1978, which looks likely to be the best combined sales year on record.

However, most analysts would be surprised if next year matches the anticipated 15.2m cars and trucks which will be sold in 1978 and the pessimists who expect a serious decline in consumer spending are projecting total sales of less than 14m. However, General Motors who last year called the 1978 sales year pretty accurately is predicting 15.5m sales of cars and trucks in the 1979 model year.

Bendix dividend lift expected

CHICAGO, August 30.

BENDIX IS expected to chalk up its ninth consecutive year of record earnings in fiscal 1979, despite an anticipated decline in North American car production in the new model year which begins on Friday.

Securities analysts also expect the quarterly dividend to be raised to at least 60 cents from the present rate of 57 cents this Autumn.

Last year, Bendix derived more than 63 per cent of its pre-tax operating net income from automotive products, including brake and steering systems, oil filters, spark plugs and other components, as well as recreational vehicles.

Analysts such as Mr. Joseph Phillippi of Dean Witter Reynolds and Mr. Paul Mallon of Merrill Lynch predict that Bendix's automotive sales and operating profit will continue to advance next year.

Mr. Phillippi said that spare parts volume was likely to be up about 10 to 12 per cent world-wide in fiscal 1979.

But about 60 per cent of Bendix's automotive components business is in original euipment, and he expects 1979 model-year car production in North America to be flat or up to 5 per cent lower than this year's 10.35m units.

Both analysts believe that Bendix will also benefit from price increases and greater market penetration in North America, along with higher international margins due to improvement at its largest overseas subsidiary, DBA of France.

Mr. Phillippi reckons that DBA's losses will trim Bendix earnings by about 25 cents a share in the year ending September 30.

He said Bendix was aiming for breakeven results at DBA in fiscal 1979. It plans to sell DBA's aerospace and automotive electrical divisions and retain its brake parts business.

He believes that Bendix's automotive pre-tax profit will reach $187.4m next year against an estimated $175.2m in fiscal 1978 and $165.3m last year.

For the company as a whole, analysts are projecting earnings of $5.70 a share in the year ending September 30 and $6.10 in fiscal 1979, against $5.29 last year.
Reuter

Reliance chief agrees to court order

By Our Own Correspondent

NEW YORK, August 30.

MR. SAUL STEINBERG, chairman of Reliance Group, the diversified company which includes Leasco, yesterday agreed to a court order barring him from future violations of the anti-fraud provisions of the Federal securities laws. Mr. Steinberg had earlier been accused by the Securities and Exchange Commission, together with Mr. James Randall of Los Angeles, of violating these laws. Both men declined to admit or deny the charges.

The SEC alleged that Mr. Steinberg induced Mr. Randall and others to buy stock in Pulte Home Corporation on the American Stock Exchange in July, August and September, 1976 on the basis of misleading statements about a proposed business venture between Pulte and International Basic Economy Corporation. The SEC alleged that at the time Mr. Steinberg was planning to sell his Pulte stock.

Mr. Steinberg's lawyers said he agreed to the court order "solely to avoid the distraction and expense of protracted and pointless litigation." The charges, he said, concerned "personal investment transactions conducted in good faith and with no intention of impropriety."

RESULTS IN BRIEF

Genesco leaves heavy losses behind

NEW YORK, August 30.

GENESCO, the clothing and shoes concern, emerged from the loss zone last year, producing earnings of 90 cents a share compared with the record 1976-77 deficit of $11.12.

But Cook Industries, the commodities group, remained firmly in the red, although its per share loss came down sharply from $22.07 to $4.34.

Also reporting for the year, **Northwestern Steel and Wire** earned $3.97 per share against $1.84, while tools and equipment concern **Omark Industries** also recorded a sizeable gain from $1.91 to $4.10. In the consumer electricals sector, **Tandy Brands** advanced from $1.70 a share to $1.82, while **Servomation**, the object of a bid tussle between Ligget and GDV, went ahead from $2.75 to $3.50 last year.

After its first quarter, **H and R Block**, which provides income tax services, reported a slightly *higher per share loss of 21 cents* against 20 cents.

McDonough, the shoes, tools and building materials concern, increased its first half earnings from $1.86 to $2.28 a share, while **Simplicity Patterns**, which produces clothing patterns, edged up from 48 cents to 49 cents. **Kings Department Stores** moved up 10 per cent to 55 cents during the initial six months.

Clothing company **Palm Beach** went ahead during its first nine months from $2.39 to $2.68 per *share, while metals, textiles and* chemicals concern **Whittaker** rose to $1.61 from 67 cents.

FTC probe for gases sale by Chemetron

NEW YORK, August 30.

THE U.S. Federal Trade Commission said it is investigating a proposal by Allegheny Ludlum Industries to sell the industrial gases division of its Chemetron unit to Liquid Air, which is French controlled.

In Chicago, meanwhile, a federal district judge accepted an agreement between Chemetron and Rhinechem, a unit of Bayer of West Germany, that will delay the proposed sale of Chemetron's organic pigments division to the Bayer unit.

The FTC's bureau of competition in Washington declined to give details on its study of the proposed Chemetron-Liquid Air sale. Allegheny Ludlum, in its second quarter report to shareholders, disclosed the FTC action is an item that referred to investigations of both transactions.

Allegheny Ludlum announced in June that it agreed to swap Chemetron's industrial gases division for an interest of about one-third in Liquid Air, which is 79 per cent owned by L'Air Liquide of France. Last year, the U.S. concern earned $19.9m, or $2.75 a share, on sales of $294.5m.
AP-DJ

U.S. investment abroad slows

WASHINGTON, August 30.

U.S. DIRECT investment abroad—defined as ownership of 10 per cent or more of a foreign company's stock—rose by 9.1 per cent last year to $148.8bn, trailing the 9.9 per cent gain at the end of 1976 to $136.4bn, the Commerce Department said.

Equity and inter-company outflows, which include loans and advances to affiliates and branches, increased by 25 per cent to $4.9bn at the end of 1977 from $3.9bn at the end of 1976.
AP-DJ

Grand Union offer

GRAND UNION, part of Sir James Goldsmith's Cavenham group, said that as of August 29, it received tenders for about 3.33m shares, or about 88 per cent of Colonial Stores common stock, at $35 a share, Reuter reports from Elmwood Park. The offer, worth over $130m, has been extended to Friday.

Grand Union said that all shares properly tendered will be purchased and paid for as soon as practicable. All shares properly tendered during the extension will be purchased on a daily basis.

Saint Gobain plans to raise $136m by rights

BY DAVID CURRY

PARIS, August 30.

IN LAUNCHING the largest rights issue the French stock market has ever seen, Saint-Gobain-Pont-a-Mousson is to become the third leading company in recent weeks to take advantage of the rise this year in share price values.

It is to tap shareholders for FFr 594m, or $136m. The issue will be on a one-for-six basis at FFr 120, which represent a discount of around 18 per cent on present values for the Saint-Gobain share price.

The new money will be devoted to reinforcing the company's capital base since current investment needs are covered adequately by existing resources and cash-flow. However, the group's president M. Roger Martin has made no secret of the fact that in the long term the group needs to replace some of its traditional but increasingly obsolete activities. He has cited areas like optical fibres and fine chemicals as the sort of areas which might be appropriate.

Before the holidays Compagnie Generale d'Electricite led the way to the stock market to raise FFr 300m and last week Compagnie Francaise des Petroles announced a FFr 558m rights issue.

Behind this activity is the rise in share values since the beginning of the year, coupled with the confidence engendered by the government general election victory.

Share values are up some 40 per cent on their end-of-year levels for many companies. St. Gobain itself moved up to a peak of FFrs155 during the summer before rumours of the impending rights issue eased the shares back to their current level.

In a separate development, Jacques Borel International, the finacially troubled hotel and restaurant chain, reports a net loss of FFr 56m ($13m) for the first six months of 1978 compared with a loss of FFr97m a year earlier. Before depreciation and extraordinary items, the half year losses totalled FFr 48m against FFr 57m.

In December last year, at the time of a borrowing operation on the Paris bond market, the directors forecast that after continued losses in 1978 the company would move out of the red in 1979.

See Lex

Uddeholm forecasts a return to profitability

BY JOHN WALKER

UDDEHOLM, the Swedish steel and forest industry group, reports a somewhat less depressing picture at the half-way stage this year. The pre-tax loss for the first six months of 1978 amounted to SKr 178m ($41m), compared with a pre-tax loss of SKr 213m in the first half of last year.

Group sales went up by 20 per cent in the first half of this year to SKr 5bn ($340m) compared with SKr 1.2bn in 1977.

The forest industry division sales during the first half of this year showed an increase of 21 per cent over the same period in 1977 at SKr 356m ($80m). The result in the steel section showed an improvement from a pre-tax loss of SKr 113m in 1977 to a loss of SKr 21m in the same period this year.

The last five months of this year should give a positive result, particularly in the steel and power divisions. The pre-tax forecast for the whole of 1978 takes in a SKr 200m recovery against last year, when the loss amounted to SKr 320m.

$700m West German bond placing

By Jeffrey Brown

AFTER an absence from the public bond market of more than four months, the West German Government is to issue DM1.4bn ($700m) of new paper spread between two tranches of six and 10 years.

The six-year tranche (of DM900m) will carry a coupon of 6 per cent and the 10-year bonds will be fixed at 6½ per cent. Both issues will be priced at 99, and in each case DM100m of the issue will be available in the market for regulating purposes.

An issue by the Federal Republic has been expected for some time following the recent recovery in the domestic bond market. The latest issue is the first by the Federal authorities since April, when DM1.5bn in bonds, spread equally between three tranches ranging from six to 12 years, met with a very muted response.

Since then the Federal authorities have concentrated their funding programme on the short term paper market, allowing the public bond arena to settle and find a new yield level. This appears to be the present circumstance: in April 10-year bonds were being offered on a coupon of 6 per cent or less.

EUROBONDS

EIB $100m issue priced

BY FRANCIS GHILES

The dollar sector of the bond market was dominated yesterday by the rise in the U.S. prime rate: prompted by Chase Manhattan, which moved its prime rate up by ¼ per cent to 9¼ per cent, many other banks followed suit. Federal Funds also moved higher by a quarter of a point to 8¼ per cent, at one point touching 8⅜ per cent.

Trading was minimal, but dealers marked prices down by an average of a quarter of a point. The Floating Rate Note sector remained quiet.

The $100m 12 year bond for the European Investment Bank was priced yesterday at 99¼ per cent. It will carry a coupon of 9 per cent and yield 9.1 per cent. Of the total amount of this issue, $80m will be placed in Japan and the remainder in Europe. The larger tranche, which is led by Nikko Securities, constitutes the first public dollar denominated bond to be floated in Japan. The smaller tranche is led by Credit Suisse First Boston Ltd and will be placed outside Japan and the U.S.

The Deutsche Mark sector was active with prices edging up slightly. The only new issue announced yesterday was a DM40m convertible for Stanley Electric Company. The coupon is understood to be 3½ per cent but other terms have not been confirmed. Lead manager is Dresdner Bank.

Airlines stake

Texas International Airlines said it now owned 1.55m shares of National Airlines—about 18.2 per cent of the outstanding stock, at the close of trading yesterday, Reuter reports from Houston.

Sulzer orders below budget

ZURICH, August 30.

Incoming orders of Swiss engineer Gebrueder Sulzer are now running about 25 per cent below budget and the quality of the business is in some cases taking the company into areas of low margins.

Discussing the effects on Sulzer of the franc depreciation, chairman Georg Sulzer told the weekly newspaper Weltwoche in an interview that the prices obtained for many deals are below cost. The business mix is getting steadily worse so that the average margin is on a pronounced downward trend, he said. Sulzer is taking on "bad orders" to avoid short time working.
Reuter

SELECTED EURODOLLAR BOND PRICES
MID-DAY INDICATIONS

STRAIGHTS	Bid	Offer
Alcan Australia 8¾pc 1989	97½	98½
AMEV 8pc 1987	94¾	95½
Australia 8¼pc 1983	94	94¾
Australian M. & S. 9½pc '92	95¾	96¼
Barclays Bank 8¾pc 1992	95½	96½
Bowater 9½pc 1992	98½	99½
Can. N. Railway 8¾pc 1986	95¼	96
Credit National 8¾pc 1986	97½	98
Denmark 8¾pc 1984	98	98½
ECS 9pc 1993	99½	100½
ECS 8¾pc 1997	93½	94½
EIB 8¾pc 1992	96½	97
EMI 9½pc 1989	96½	98¼
Ericsson 8¾pc 1989	97½	99
Esso 8pc 1986 Nov.	99	99¾
Gt. Lakes Paper 8¾pc 1984	98¼	99
Hamersley 9¾pc 1992	100½	101½
Hydro Quebec 9pc 1992	97½	98
ICI 8¾pc 1987	95½	96½
ISE Canada 9¼pc 1986	102½	103½
Macmillan Bloedel 9pc 1992	97½	98½
Massey Ferguson 9¼pc '91	98	98½
Michelin 9½pc 1988	99½	100¼
Midland Int. Fin. 8¾pc '92	97½	98½
National Coal Bd. 8pc 1987	93¾	94½
National Wstmnstr. 9pc '86	100½	101½
Natl. Wstmnstr. 9pc '86 'B'	101½	102½
Newfoundland 9pc 1989	100	100½
Nordic Inv. Bank 8¾pc 1988	97½	98¼
Norges Kom. Bk. 8¾pc 1992	95½	96
Norpipe 8¾pc 1989	96½	97½
Norsk Hydro 8½pc 1992	95	95¾
Oslo 9pc 1988	99½	100½
Ports Autonomes 9pc 1991	98½	99½
Prov. Quebec 9pc 1995	97	97½
Prov. Saskatchwn. 8¾pc '86	97½	98½
Reed International 9pc 1987	93½	94½
RHM 9pc 1992	94½	95¼
Selection Trust 8¾pc 1989	91½	92½
Shell Intl. Fin. 8½pc 1990	95½	96
Skand. Enskilda 9pc 1991	99½	100
SKF 8pc 1987	91½	92½
Sweden (K'dom) 8¾pc 1987	95½	96
United Biscuits 9pc 1989	98	98½
Volvo 8pc 1987 March	93¾	94½
NOTES		
Australia 7¾pc 1984	93½	94
Bell Canada 7¾pc 1987	95½	96½
Br. Columbia Hyd. 7¾pc '85	93½	94½
Can. Pac. 8¼pc 1984	97½	98½
Dow Chemical 8pc 1986	96	96½
ECS 7¾pc 1982	95	95½
ECS 8½pc 1989	94½	95
EEC 7¾pc 1982	93½	94
EEC 7¾pc 1984	94½	95½
Enso Gutzeit 8½pc 1984	95½	96½
Gotaverken 7¾pc 1982	95½	96
Kockums 8pc 1983	96½	97½
Michelin 8¾pc 1983	98½	99
Montreal Urban 8¾pc 1981	99½	100
New Brunswick 8pc 1984	96½	97
New Bruns. Prov. 8¾pc '83	98	98½
New Zealand 8¼pc 1986	95½	96½
Nordic Inv. Bk. 7¾pc 1984	94	94½
Norsk Hydro 7¾pc 1982	95½	96½
Norway 7¾pc 1982	94½	95½
Ontario Hydro 8pc 1987	93½	94½
Singer 8¾pc 1982	89	89½
S. of Scot. Elec. 8¾pc 1981	98½	99
Sweden (K'dom) 7¾pc 1982	95½	96
Swedish State Co. 7¾pc '82	95½	98½
Telmex 9¾pc 1984	99½	100
Tenneco 7¾pc 1987 May	91½	92½
Volkswagen 7¾pc 1987	94½	95½
STERLING BONDS		
Allied Breweries 10¾pc '90	89½	90½
Citicorp 10pc 1993	91½	92½
Courtaulds 9½pc 1989	89½	90½
ECS 9½pc 1989	92½	93½
EIB 9½pc 1988	96½	97½
EIB 9½pc 1992	92½	93½
Finance for Ind. 9¾pc 1987	90½	91½
Finance for Ind. 10pc 1989	94	95
Fisons 10½pc 1987	97½	98½
Gestetner 11pc 1988	92½	93½
INA 10pc 1988	91½	92½
Rowntree 10¾pc 1988	92	93
Sears 10¾pc 1988	91½	92½
Total Oil 9½pc 1984	89½	90½
DM BONDS		
Asian Dev. Bank 5½pc 1988	93½	94½
BNDE 6¾pc 1986	96½	97½
Canada 4¾pc 1983	97½	98½
Den Norske Ind. Bk. 6pc '90	88½	89½
Deutsche Bank 4½pc 1983	97½	98½
ECS 5½pc 1990	92	93
EIB 5¾pc 1990	92½	93½
Elf Aquitaine 5½pc 1988	93	94
Euratom 5½pc 1987	94½	95½
Finland 5½pc 1986	94½	[illegible]
Forsmarks 5¾pc 1990	94½	95½
Mexico 6pc 1985	95½	96½
Norcem 5¾pc 1989	98	99
Norway 4½pc 1983	98½	99½
Norway 4½pc 1983	96	97
PK Banken 5½pc 1988	94½	95½

	Bid	Offer
Prov. Quebec 9pc 1990	96½	97½
Rautaruukki 8¾pc 1986	93	94
Spain 8pc 1986	95	96
Trondheim 8¾pc 1988	94½	95½
TVO Power Co. 8pc 1988	96	97
Venezuela 8pc 1988	94½	95½
World Bank 8¾pc 1990	96½	97½
FLOATING RATE NOTES		
Bank of Tokyo 1984 8¾pc	99	99½
BFCE 1984 9 7/16pc	99½	99¾
BNP 1983 8 11/16pc	99½	100½
BQE Worms 1983 9pc	99	99½
CCF 1985 8¾pc	98½	99½
Chase Manhttn. '93 9 5/16pc	98	98½
Creditanstalt 1984 8½pc	99	99½
DG Bank 1982 9pc	99½	100½
GZB 1981 8 1/16pc	99½	100½
Intl. Westminster 1984 8pc	99½	99½
Lloyds 1983 8 13/16pc	99½	100½
LTCB 1983 9pc	99½	99½
Midland Int. FS '87 8 9/16pc	99½	98½
Midland Int. FS '93 8 7/16pc	98½	99½
Nat. Westmnstr. '90 9 5/16pc	99½	99½
OKB 1983 9½pc	99½	100½
SNCF 1985 9 5/16pc	99	99½
Stand. and Chtrd. '84 8½pc	99½	99½
Source: White Weld Securities.		
CONVERTIBLES		
American Express 4¼pc '87	81½	85
Babcock & Wilcox 7pc '93	101	102½
Beatrice Foods 4½pc 1992	101	102½
Beatrice Foods 4½pc 1992	117½	119
Beecham 6½pc 1992	110	111
Borden 5pc 1992	97½	99
Broadway Hale 4¾pc 1987	74½	76
Carnation 4pc 1987	76	77½
Chevron 5pc 1988	135½	137
Dart 4¾pc 1987	82	83½
Eastman Kodak 4½pc 1988	87½	89
Economic Labs. 4¾pc 1987	76	77½
Firestone 5pc 1988	78	79½

	Bid	Offer
Ford 5pc 1988	82	83½
General Electric 4¼pc 1987	84½	86
Gillette 4¾pc 1987	76½	78
Gould 5pc 1987	125	

Source: Kidder, Peabody Securities.

VONTOBEL EUROBOND INDICES

14.5.76=100%

PRICE INDEX	22.8.78	29.8.78	AVERAGE YIELD	22.8.78	29.8.78
DM Bonds	105.09	105.24	DM Bonds	6.631	6.607
HFL Bonds & Notes	102.39	102.86	HFL Bonds & Notes	7.901	7.827
U.S. $ Strt. Bonds	99.07	99.19	U.S. $ Strt. Bonds	8.919	8.899
Can.-Dollar Bonds	99.23	99.38	Can.-Dollar Bonds	9.487	9.457

INTL. FINANCIAL AND COMPANY NEWS

Toray forecasts return to profit

By Our Financial Staff

A STRIKING turnround from losses to profits was forecast yesterday by Toray Industries, the largest producer of synthetic fibres in Japan.

The company made the prediction when unveiling its consolidated results for the year ended last March, which showed an overall loss of Y3.76bn, or $1.98m, compared with profits in 1976-77 of Y532m. This year a return to profits of Y7bn is expected.

However, the company's losses last year underline the extent of the recession that has gripped the Japanese textile industry. Toray's consolidated sales last year dipped by 3 per cent to Y484.4bn while the forecast of a return to profits in 1978-79 is not accompanied by any sustained revival in demand. Group turnover for the current year is expected to emerge at Y490bn.

Toray's results compare relatively favourably with those from Kanebo, where a consolidated loss of Y9.35bn, or $4.9m, was incurred for the year ended April. Unlike Toray, Kanebo declined to provide any comparative figures with its fully consolidated accounts.

The company's problems stem from its three synthetic fibre divisions (nylon, acrylic and polyester), which between them account for some 55 per cent of total sales. A relative newcomer to these markets, Kanebo is generally reckoned to have been forced into price cutting on a more substantial scale than most of its competitors.

Toray said yesterday that a sluggish domestic synthetic textile market and a drop in export sales due to the yen's sharp appreciation against the dollar were responsible for the sales fall. Factors contributing to the year's losses included a sharp fall in parent company net income and a slump in some overseas subsidiaries, including a Hong Kong-based operation. By contrast domestic companies owned jointly with foreign partners "performed well."

Setback at Steelbrite

JOHANNESBURG, August 30.

THE RECESSION in South Africa's building industry is reflected in the preliminary results from one of the country's larger kitchen equipment manufacturers, Steelbrite. After a first-half net loss of R152,000, the company has now reported a further deterioration and a loss of R695,000 ($800,000) in the second six months to June 30, 1978.

After the first half, Steelbrite, which is 83.7 per cent owned by Johannesburg Consolidated Investment, predicted no second-half improvement despite a rationalisation of its manufacturing divisions. The same prediction is repeated for the current period, and with little likelihood of new building starts recovering in anything but the medium term, a return to profitability is some way off.

Richard Rolfe adds: The industrial conglomerate Calan, whose interests range through lighting, plastics and rubber, has reported its first profits setback for more than a decade in the 12 months to June 30. On turnover up from R121m to R132m ($153m), income before tax fell from R8.7m to R6.9m ($8m). After adjustment for minority interests and tax, net income was down from R5.7m to R4.5m. On this basis earnings per share were down from 81 cents to 61 cents, but the income statement takes in net attributable income of associates of R0.7m for earnings, by this reckoning, down from 88 cents to 70 cents.

BHP sees some signs of improvement in demand

BY JAMES FORTH

SYDNEY, August 30.

THE directors of Broken Hill Proprietary Company, Australia's largest company and its sole steel producer, were cautiously optimistic about the outlook for the group in 1978-79 in to-day's annual report. They said the importance of government achievements in reducing the inflation rate was recognised, but added that the low rate of growth in economic activity had a depressing effect on both local and overseas demand for most of BHP's products.

"None the less, the Australian economy does continue to grow slowly, and some signs of improved demand for steel are now apparent. Export prices for steel have risen," they said.

BHP previously reported a jump in group profit for the year from A$52m to A$84m (U.S.$97m) mainly due to a lift in earnings from oil and gas from A$79m to A$104m, and a reduced loss of A$43m from steel operations.

The report disclosed that orders for steel from Australian customers rose 7.5 per cent during the year. The automotive industry, historically a large market, was particularly affected and orders were at their lowest level for four years.

Steel imports also affected some of BHP's subsidiary and associated companies. Raw steel production dipped slightly from 7.47m tonnes to 7.36m tonnes, and despatches to the domestic market were almost unchanged at 3.75m tonnes. Exports of iron and steel fell from 2.77m tonnes to 2.54m tonnes, which assisted significantly in maintaining the level of operations.

In general, export prices remained at depressed levels for most of the year, although there was an encouraging upward movement in prices for orders booked in the later months. This followed production cuts by the Japanese steel industry, the introduction of a trigger price mechanism for imports into the U.S. and minimum prices stipulated by the EEC. These improved prices occurred too late to have much effect on the year's results. Moreover, the directors said that demand levels overseas remained far from buoyant, with strong competition for the available business.

Continued recovery in export prices and a higher level of domestic demand were the factors looked to in the immediate future for improvement in the group's steel business.

The lower contribution from the minerals division was primarily due to the world-wide downturn in demand for steel industry raw materials, which was reflected in reduced prices for ore and coal. Iron ore shipments were in line with those of the previous year. The directors said the marketing programme for the Deepdale iron ore project in Western Australia was continuing, but the recession in the world steel market meant the immediate outlook for additional sales of iron ore was not encouraging.

On the oil and gas activities, the directors pointed out that the proportion of Bass Strait crude receiving import parity, less a production levy of A$3.00 a barrel, rose from 19 per cent to 26 per cent on July 1. The report was written before the 1978-79 Federal Budget, which imposed a much heavier levy on consumers on remaining production to lift all oil produced to world parity.

The directors said they believed the government's recent decision not to impose a secondary tax on earnings from "old" oil was correct, and to have done so while imposing an artificially low selling price on crude produced would have been unique and, in terms of national objectives of facilitating exploration and the financing of subsequent development, counter-productive.

The report showed that the group's liquidity at the May 31 balance-sheet date was sound, with liquid funds of A$233m.

MEDIUM TERM CREDITS

Further small loans for Spain

BY FRANCIS GHILES

SPANISH companies are continuing to raise relatively small loans in the syndicated credit market: the latest of these is a $30m (which could be increased) 10 year loan on a spread of ⅞ per cent for the first three years rising to ¾ per cent for Compania Telefónica Nacional de Espana. Lead manager is Chase Manhattan Ltd.

Other Spanish utilities will be raising loans in the months to come, but one major operation for the Kingdom is widely expected.

This operation may be for as much as $1bn, but any higher figure is firmly ruled out in Madrid. Spain is expected to borrow about $1bn less this year than was expected last spring. The Kingdom has already borrowed $1.4bn so far this year, about $400m more than over the same eight month period of last year.

Another European borrower is currently raising money: Assi AB, the Swedish state-owned producer of sawn timber, is arranging a $45m 10-year loan through a group of three banks, PK Banken, Svenska Handelsbanken and Hambros. The spread being paid by the borrower is understood to be under 1 per cent.

In South-East Asia, the Philippines National Oil Company is raising $64m for 10 years on a split spread of ⅞ per cent for the first five years rising to 1 per cent. Part of the proceeds of this loan, which is being led by Chase Manhattan Asia, will help refinance earlier loans arranged by this borrower.

Korean Airlines is raising $124m for eight years carrying a spread of ⅞ per cent. The proceeds of this loan which Chase Manhattan Asia is leading and Korea Development Bank is guaranteeing, are earmarked for the purchase of aircraft.

A loan of $32m for eight years has just been signed for the Kingdom of Thailand: lead manager is Grindlay Brandts, and the borrower is paying a spread of ⅝ per cent for the first four years rising to ¾ per cent with three years grace.

The $500m 10-year loan for Quebec Province, arranged by Orion Bank, has just been signed in London. This loan, which is the largest ever raised by the Province in the international financial markets, carries a spread of ⅝ per cent for the first two years rising to ¾ per cent.

In Latin America, Empress Lineas Maritimas Argentinas is arranging a $50m loan for 11 years with a spread of ¾ per cent throughout. The loan, which is co-led by Commerzbank and Bank of Montreal, carries a sovereign guarantee.

The Republic of Liberia is raising $60m for eight years, with three years grace, on a spread of 1⅞ per cent. This is the second time this borrower has come to the market; the first time was in January last year when it raised a $30m seven year loan on a spread of 2 per cent. Chase Manhattan has received the mandate for the latest loan, as it did for the first.

Seacorp first half rise

BY WONG SULONG

KUALA LUMPUR, August 30.

SOUTHEAST Asia development Corporation (Seacorp), the Malaysian finance and investment company, continues to ride on the boom in the local share market and the high liquidity in the banking system. The company has reported a 48 per cent increase in profits for the first half of the year to 2.88m ringgits ($1.2m) while turnover fell by 8 per cent to 957m ringgits ($411m).

The interim dividend is unchanged at 15 per cent.

Meanwhile, after three years of sluggish results, Harper Gilfillan Berhad, the Malaysian-based trading and travel group, has produced an encouraging set of half-year results, with pre-tax profits rising by 45 per cent to 4.1m ringgits ($1.8m).

Sales during the six months rose by only 6 per cent to 223.5m ringgits ($96m).

The group said there was every indication to believe that results for the full year would show a satisfactory advance over last year's pre-tax profits of 7.25m ringgits.

AMI reduces dividend

By Our Own Correspondent

SYDNEY, August 30.

AUSTRALIAN Motor Industries (AMI), which assembles and distributes Toyota motor vehicles, has reduced its dividend from 7.5 cents a share to 7 cents after a 3 per cent fall in profit for the year to June 30, from $A5.87m to $A5.68m (U.S.$6.6m).

Turnover for the year edged up 1.1 per cent from $A252m to $A255m (U.S.$294m). Earnings per share dipped from 47 cents to 37 cents—leaving the dividend covered more than five times.

MR. YASAR'S TURKISH CONGLOMERATE

Object lesson for entrepreneurs

BY METIN MUNIR IN IZMIR

DENMARK can boast an unusual and intriguing figure as its honorary consul in Izmir—Mr. Selcuk Yasar. It may seem odd that a man whose consolidated sales went well over $100m last year should concern himself with issuing visas. But an examination of his 20-year-old business empire shows that he is the ideal man for the job; Mr. Yasar's fortune was built on his Danish connections.

In the early 1950s, Mr. Yasar went to Denmark to buy licences from the internationally known firm of Sadolin and Humbold, who supplied his father's paint shop in Izmir. At first the Danes did not take him very seriously but eventually they agreed to do a deal and with a Turkish Lira 500,000 capital ($20,000 at the present exchange rate) he started off. Gradually the small family workshop was transformed into a high-powered factory.

Mr. Yasar's new enterprise, established in 1954, was the first of its kind in Turkey. It now supplies the national market with auto and construction paints, Colofan, paint brushes, under licence from Britain's L. G. Harris, and micronised minerals.

Last year the sales of the paint complex amounted to Turkish L868m ($45m), accounting for 40 per cent of total turnover. The two companies, DYO and DYO and Sadolin, manufacture more than 60 per cent of Turkey's printing ink and industrial paint needs and 30 per cent of construction paints.

Thanks to Mr. Yasar's pioneering work in the field Turkey is now virtually self-sufficient in paints.

In 1966 Mr. Yasar went into another profitable business with the Danes, establishing the Tuborg beer plant with United Breweries. Working round the clock, the Izmir Tuborg plant is now bottling 450,000 hectolitres of beer annually and has a $40m expansion programme awaiting Government approval which may never be given. The plant is 60 per cent Danish-owned. The Turkish Government looks askance at the expansion of majority foreign-owned firms.

Last year Tuborg grossed 368m Turkish Lira ($19m).

The third biggest money winner was Pinar, Turkey's first and biggest dairy plant (equipped by the Danes). Then there is the Altin Yunus (Golden Dolphin) tourism complex, the biggest in Turkey and also a joint venture with the Danes, which grossed over 40m Turkish Lira ($2m). The complex is at Cesme, the Turkish Aegean resort near Izmir.

The Yasar group, which celebrates its 10th anniversary as a holding company, is now one of the 10 biggest in Turkey and consists of 19 diversified companies and two foundations employing 3,500 people. The overall results show a spectacular growth, typical of most large private industrial groups and paradoxical in view of the economic crisis.

Consolidated sales in 1977 rose by 38 per cent compared with the previous year to reach 2.1bn Turkish Lira ($111m). The increase in profits was 85 per cent to the equivalent of $12m.

Total assets in 1977 stood at 2.3bn Turkish Lira ($120m), 30 per cent higher than the previous year.

Mr. Yasar personifies the strongest and weakest traits of most Turkish industrialists. Like the biggest three, Sabanci, Koç and Eczacibasi, he was far-sighted enough to see an opening at a time when Turkey manufactured almost nothing. The characteristics of the market—high demand, protection from outside competition and lack of any industrial base—led Mr. Yasar and other industrialists into manufacturing high volume and high velocity consumer items, dependent on imported machinery, know-how and a high percentage of imported supplies.

But Turkish industrialists became addicted to the notion that they could sell virtually anything, at any price, at home. They never bothered to export.

"To tell you the truth," a Yasar holding company executive confessed, "exporting for us is no more than a hobby." The exports of Turkey's 10 biggest holding companies last year were estimated at less than $60m or under 10 per cent of their total turnover.

Conceivably, the present grave economic crisis will become an eye-opener for the Yasars of Turkish private business. The acute foreign currency shortage has finally begun to bite into the biggest groups by diminishing their imports.

Yasar Holding's paint factories, for instance, are working at half-capacity because the government does not have the $7m to spare for their import requirements. So far both Yasar and the other biggest holding companies have continued to make fat profits, their import channels staying open, due to their long-established supply lines and—equally important—to the sharp increases in their sale prices.

But given Turkey's bleak short-term outlook, neither can last long and, in the words of another Yasar executive: "We will either learn how to export or expire."

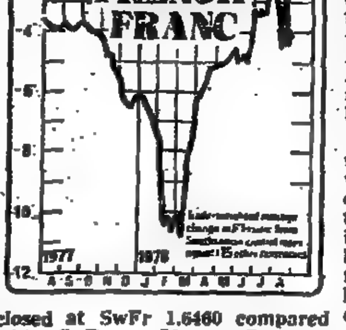
CURRENCY, MONEY and GOLD MARKETS

Dollar closes below best level

BY DAVID BUCHAN

The U.S. dollar closed below its best levels against most major currencies in yesterday's foreign exchange market with conditions described as being fairly active. Early trading saw the U.S. currency slightly weaker but news that some U.S. banks had increased their prime rates by ¼ per cent to 9¼ per cent boosted the dollar. However, it finished below its best level for the day on renewed fears that the U.S. inflation rate could continue to accelerate.

Against the Swiss franc, the dollar touched SwFr 1.6570 at one point after a low of SwFr 1.6220. It closed at SwFr 1.6460 compared with SwFr 1.6350 on Tuesday. The West German mark closed slightly firmer at DM 1.9890 from DM 1.9910 having touched DM 1.9763 during the day after a low point of DM 1.9965.



Using Morgan Guaranty figures at noon in New York, the dollar's trade weighted average depreciation widened to 9.2 per cent compared with 8.9 per cent previously.

Sterling opened at $1.9430-1.9445 and with an initially weaker dollar, touched a best level of $1.9510. However, positions were reversed during the afternoon and the pound fell to $1.9365 before recovering to close at $1.9400-1.9420, a fall of 45 points on Tuesday's close. On Bank of England figures, sterling's trade weighted index was unchanged at 62.4, having stood at 62.3 at noon and 62.5 in the morning.

NEW YORK—The dollar had a better than expected day following Tuesday's heavy selling triggered by the July trade figures. Trading was described as very moderate.

Late yesterday the dollar was quoted against the mark at DM1.9925 (DM1.9850 last night) against the SwFr 1.6485 (SwFr 1.6235) against the Yen Y189.10 (Y189.20) and against sterling $1.9370 ($1.9460).

FRANKFURT—The dollar was fixed at DM 1.9855 compared with DM 1.9892 earlier on and Tuesday's fixing of DM 2.0224. However, some sources suggested that the dollar may stabilise around its current levels ahead of any further news out of the U.S. Official intervention was not detected at the fixing although there may have been some support through interbank dealings. In later trading the U.S. currency stood at DM 1.9927, an improvement on the fixing but below its best level of DM 1.9975.

ZURICH—Although above its worst levels, the dollar was somewhat weaker against most major currencies in moderately active trading. Recent measures to improve the dollar's position have been nullified by recent trade figures for July. The authorities had declined to intervene early on in the day and the dollar was quoted at SwFr 1.6317½, up from its morning low of around SwFr 1.6300.

PARIS—The dollar staged a slight recovery against most currencies following moves by some U.S. banks to increase their prime rates to 9¼ per cent from 9 per cent. In early trading the dollar was quoted at FFr 4.3632½, up from FFr 4.3475 earlier on but down on Tuesday's late level of FFr 4.3750.

TOKYO—The U.S. dollar continued to suffer the effects of July's $2.99bn trade deficit and fell to Y188.20 at one point before recovering at the close to Y189.725 compared with Y194.30 on Tuesday.

MILAN—In early trading the dollar continued to lose ground against the lira as economic considerations brought further pressure on the U.S. currency. The dollar was quoted at L833.5 against the previous fixing of L845.30.

THE POUND SPOT

Aug. 30	Bank rates %	Day's spread	Close
U.S. $	7¾	1.9365-1.9510	1.9400-1.9420
Canadian $	9	2.2240-2.2370	2.2300-2.2320
Guilder	4½	4.17-4.21½	4.19½-4.20½
Belgian F.	6	60.55-61.05	60.65-60.75
Danish K.	8	10.64-10.68½	10.65½-10.66½
D-Mark	3	3.85-3.88½	3.85½-3.86½
Port. Esc.	18	87.50-88.75	88.00-88.50
Span. Pes.	8	142.90-145.60	145.00-145.15
Lira	11½	1,618-1,626	1,620-1,621
Norwgn. K.	7	10.15-10.20	10.16½-10.17½
French Fr.	9½	8.44½-8.50	8.45½-8.46½
Swedish Kr.	6½	8.58-8.62	8.60-8.61
Yen	3½	364-374	366-368
Austria Sch	4½	27.90-28.05	27.90-28.00
Swiss Fr.	1	3.18-3.22	3.19-3.20

Belgian rate is for convertible francs. Financial franc 62.60-62.70.

FORWARD AGAINST £

One month	% p.a.	Three months	% p.a.
0.55-0.45c pm	2.97	1.22-1.12c pm	2.41
0.50-0.40c pm	2.42	1.20-1.10c pm	2.06
2⅛-1⅛ c pm	5.71	6⅝-5⅝c pm	5.60
20-10 c pm	2.97	60-50c pm	3.62
par-2 ore dis	-1.13	3¼-6¾ ore dis	-1.78
3-2 pf pm	7.77	8-7 pf pm	7.77
30-150 c dis	-19.03	200-500 c dis	-15.88
50-150 c dis	-8.35	150-250 c dis	-5.57
5⅛-5¾ lire dis	-3.53	13-16 lire dis	-3.58
3 ore pm-1 dis	0.29	2¼-1¼ ore pm	0.49
2¼-1¼ c pm	2.84	5¼-4¼ c pm	2.56
3¼-1¼ ore pm	3.14	6¼-4¼ ore pm	2.32
3.10-2.75 y pm	9.56	8.25-7.90 y pm	6.80
17-7 gro pm	5.15	36-26 gro pm	4.44
3¾-2¾ c pm	11.27	9¼-7¼ c pm	10.49

Six-month forward dollar 2.42-2.32c pm, 12-month 4.50-4.40c pm.

THE DOLLAR-SPOT

August 30	Day's spread	Close
Canad'n $*	87.11-87.15	87.12-87.15
Guilder	2.1460-2.1620	2.1600-2.1620
Belgian Fr	31.31-31.42	31.40-31.42
Danish Kr	5.4730-5.4855	5.4830-5.4850
D-Mark	1.9800-1.9940	1.9925-1.9940
Port. Es	—	45.10-45.35
Lira	833.25-836.00	835.60-836.00
Norwgn. Kr	5.2345-5.2410	5.2390-5.2410
French Fr	4.3505-4.3685	4.3660-4.3685
Swedish Kr	4.4105-4.4335	4.4315-4.4335
Yen	188.75-190.10	189.90-190.10
Austria Sch	—	14.3550-14.3650
Swiss Fr	1.6285-1.6500	1.6520-1.6540

* U.S. cents per Canadian $.

FORWARD AGAINST $

One month	% p.a.	Three months	% p.a.
0.08-0.06c dis	-1.19	0.12-0.09c dis	-0.56
0.59-0.54c pm	3.09	1.73-1.68c pm	3.16
0.02c dis-.08c pm	-0.19	0.09-0.06c pm	0.96
—		—	
0.76-0.71pf pm	4.29	2.64-2.59pf pm	5.19
—		—	
4.30-4.70 lire dis	-5.84	12.75-13.5 lire dis	-5.98
—		—	
0.12-0.22c dis	-0.53	0.15-0.25c dis	-0.13
—		—	
1.10-0.95y pm	6.29	3.00-2.85y pm	6.11
—		—	
1.10-1.05c pm	7.61	3.32-3.27c pm	7.95

CURRENCY RATES

August 30	Special Drawing Rights	European Unit of Account
Sterling	0.658527	0.665425
U.S. dollar	1.27223	1.29339
Canadian dollar	1.46370	1.48275
Austrian schilling	18.2342	18.5650
Belgian franc	39.7731	40.4345
Danish krone	6.96800	7.08688
Deutsche Mark	2.52601	2.56680
Guilder	2.73457	2.78122
French franc	5.53929	5.62794
Lira	1062.63	1079.85
Yen	240.342	244.687
Norwegian krone	6.62959	6.74190
Peseta	93.6323	95.0618
Swedish krona	5.60990	5.70948
Swiss franc	2.09092	2.12625

CURRENCY MOVEMENTS

August 30	Bank of England Index	Morgan Guaranty changes %
Sterling	62.4	-41.0
U.S. dollar	84.2	-9.2
Canadian dollar	81.8	-15.6
Austrian schilling	140.4	+18.1
Belgian franc	110.8	+12.2
Danish krone	113.5	+4.6
Deutsche Mark	141.7	+36.2
Swiss franc	180.9	+82.8
Guilder	110.6	+17.3
French franc	99.7	-4.2
Lira	55.8	-47.0
Yen	154.0	+52.7

Based on trade weighted changes from Washington agreement December, 1971 (Bank of England Index=100).

OTHER MARKETS

Aug. 30	£	$		£ Note Rates
Argentina Peso	1.610-1.614	829.46-831.55	Austria	27.50-28.50
Australia Dollar	1.6840-1.6910	0.8683-0.8698	Belgium	62¼-63½
Finland Markka	7.9370-7.9550	4.0950-4.0960	Denmark	10.60-10.75
Brazil Cruzeiro	35.96-36.96	18.53-19.04	France	8.42-8.52
Greece Drachma	70.365-72.091	36.25-37.15	Germany	3.80-3.90
Hong Kong Dollar	9.13-9.15½	4.7200-4.7250	Italy	1600-1650
Iran Rial	134-140	69-72	Japan	370-380
Kuwait Dinar (KD)	0.526-0.536	0.2710-0.2750	Netherland	4.13-4.23
Luxembourg Franc	60.65-60.75	31.25-31.29	Norway	10.14-10.24
Malaysia Dollar	4.45-4.46½	2.2980-2.3020	Portugal	85-93
New Zealand Dollar	1.8385-1.8475	0.9474-0.9501	Spain	142-145½
Saudi Arabia Riyal	6.40-6.50	3.33-3.35	Switzerland	3.15-3.25
Singapore Dollar	4.3650-4.3800	2.2555-2.2575	United States	1.93½-1.95
South African Rand	1.6784-1.7043	0.8647-0.8780	Yugoslavia	39.00-42.00

Rate given for Argentina is free rate.

EXCHANGE CROSS-RATES

Aug. 30	Pound Sterling	U.S. Dollar	Deutschemark	Japanese Yen	French Franc	Swiss Franc	Dutch Guilder	Italian Lira	Canada Dollar	Belgian Franc
Pound Sterling	1.	1.941	3.860	367.0	8.458	3.195	4.200	1621.	2.231	60.70
U.S. Dollar	0.515	1.	1.989	189.1	4.357	1.646	2.164	834.9	1.149	31.27
Deutsche Mark	0.259	0.503	1.	95.08	2.191	0.828	1.088	419.8	0.578	15.73
Japanese Yen 1,000	2.725	5.289	10.52	1000.	23.04	8.706	11.44	4416.	6.079	165.4
French Franc 10	1.182	2.295	4.564	433.9	10.	3.778	4.966	1916.	2.638	71.77
Swiss Franc	0.313	0.608	1.208	114.9	2.647	1.	1.315	507.3	0.698	19.00
Dutch Guilder	0.238	0.462	0.919	87.38	2.014	0.761	1.	385.8	0.531	14.45
Italian Lira 1,000	0.617	1.198	2.382	226.5	5.219	1.973	2.592	1000.	1.377	37.46
Canadian Dollar	0.448	0.870	1.730	164.5	3.791	1.432	1.883	726.4	1.	27.21
Belgian Franc 100	1.647	3.198	6.359	604.5	13.93	5.264	6.919	2670.	3.675	100.

EURO-CURRENCY INTEREST RATES*

Aug. 30	Sterling	Canadian Dollar	U.S. Dollar	Dutch Guilder	Swiss Franc	West German Mark	French Franc	Italian Lira	Asian $	Japanese Yen
Short term	12-13	8¼-9¼	8⅛-8⅝	par-¼	¼-½	3⅛-3½	7¼-7⅝	32-35	—	[illegible]
7 day's notice	10-11	8¼-9¼	8¼-8⅝	4-4½	⅜-⅝	3⅛-3½	7⅝-7⅞	12½-13½	7¼-7⅝	[illegible]
Month	10¾-11¼	[illegible]	7¾-7⅞	4⅛-4⅜	[illegible]	3⅜-3½	8⅛-8⅝	13-14	7⅝-7¾	[illegible]
Three months	11⅛-11½	9⅛-9⅜	8¾-9	5⅛-5⅜	⅝-⅞	3⅛-3⅜	8⅝-8⅞	13½-14½	8⅛-8⅜	[illegible]
Six months	11⅛-11⅜	9⅜-9⅝	9-9¼	6-6¼	1⅛-1¼	3⅛-3⅜	9-9¼	14-15	9-9⅛	[illegible]
One year	11½-11⅞	9¼-9⅝	9⅛-9¼	6⅛-6⅜	1¼-1⅜	3⅞-4	10-10¼	14¼-15¼	9⅛-9¼	3⅛-3½

The following nominal rates were quoted for London dollar certificates of deposit: One month 8.40-8.50 per cent; three months 8.65-8.75 per cent; six months 8.95-9.05 per cent; one-year 9.10-9.20 per cent.

Long-term Eurodollar deposits: two years 9¼-9⅜ per cent; three years 9¼-9⅜ per cent; four years 9 5/16-9 7/16 per cent; five years 9¼-9⅜ per cent nominal closing rates. Short-term rates are call for sterling, U.S. dollars and Canadians dollars: two days' notice for guilders and Swiss francs. Asian rates are closing rates in Singapore.

INTERNATIONAL MONEY MARKET

U.S. prime rates up

Several U.S. banks, including Chase Manhattan of New York, have raised their prime lending rates to 9¼ per cent from 9 per cent. This is the first rise since the 9 per cent level became general at the end of June. The U.S. Federal Reserve entered the money market in early trading yesterday, to make overnight repurchase orders. This injected liquidity into the market and helped to relieve upward pressure as federal funds traded around 8 7/16-8½ per cent. Later on rates continued to rise to 8 9/16 per cent, however, in very nervous conditions.

BRUSSELS — Discount and lombard rates were left unchanged at 6 per cent following a Board meeting of the Belgian National Bank yesterday. A change has not been expected.

Call money quoted for the Belgian franc (commercial) eased to 5¾-7 per cent from 7-9 per cent, and one-month money fell to 6¾-6⅞ per cent from 6⅞-7 per cent. Three-month funds were quoted at 7¼ per cent compared with 7¼-7⅜ per cent previously, while six-month and 12-month were unchanged at 7¼-7½ per cent and 7¾-7⅞ per cent respectively.

AMSTERDAM — Call money remained easy at ½-⅞ per cent, with one month quoted at 5-5¼ per cent, compared with 5-5¼ per cent previously. Three-month rose to 6¼-6½ per cent from 6-6¼ per cent, and six-month was unchanged at 6¾-7 per cent.

PARIS—Day-to-day money was unchanged at 7 per cent. One-month eased 1/16 per cent to 7 3/16-7 5/16 per cent, and three-month fell by the same amount to 7 5/16-7 7/16 per cent. Six-month was unchanged at 7⅝-7¾ per cent, and 12-month declined 1/16 per cent to 8 3/16-8 7/16 per cent.

FRANKFURT — Interbank money market rates were unchanged from 3.45 per cent for call money to 4.15 per cent for six-month.

SINGAPORE — The Bank of Tokyo is to raise its Singapore prime rate to 7¼ per cent from 7 per cent from tomorrow. The last change was in October last year, when it was raised by ½ per cent to 7 per cent.

HONG KONG — The money market was tight, with call money rising to 5¾ per cent from 5½ per cent, while overnight businesss was dealt at 5¾ per cent, compared 5½ per cent previously.

GOLD

Firmer tendency

Gold improved $1⅞ an ounce in the London bullion market yesterday to $206-206½. The metal opened at $206-206½ and reached a best level for the day during the morning of $206¾-207¼. However the morning fixing proved to be something of a dissapointment with a price of $206.60. The afternoon fixing reflected the easier trend at $204.80. However some buying interest developed later on during the day with the U.S. dollar easing from its best levels and gold closed nearly $2 above the afternoon fixing in fairly busy trading. Early business in New York saw the metal continue to improve to around $206½-207¼.

In Frankfurt the 12½ kilo bar was fixed at DM13,145 per kilo ($205.97 per ounce) compared with DM13,000 ($199.94) on Tuesday.

	Aug. 30	Aug. 29
Gold Bullion (a fine ounce)		
Close	$206-206½	$204¼-205¼
Opening	$206-206½	$198¾-199¼
Morning fixing	$206.60 (£106.005)	$199.40 (£104.060)
Afternoon fixing	$204.80 (£105.585)	$199.70 (£105.878)
Gold Coins domestically		
Krugerrand	$215-216 (£109½-110½)	$210½-212½ (£108½-109½)
New Sovereigns	$59¾-61½ (£30¾-31½)	$58¼-60¼ (£30-31)
Old Sovereigns	$59¾-61½ (£30¾-31½)	$59¾-61½ (£30¾-31½)
Gold Coins internationally		
Krugerrand	$215-216 (£109½-110½)	$210-212 (£108-109)
New Sovereigns	$57¾-59½ [illegible]	$57¾-59½ (£29¾-30¼)
Old Sovereigns	$59¾-61½ (£30¾-31½)	$59¾-61½ (£30¾-31½)
$20 Eagles	$306-308½	$304-307
$10 Eagles	$161-166	$160-165
$5 Eagles	$111-116	$110-115

UK MONEY MARKET

Very large help

Bank of England Minimum Lending Rate 10 per cent (since June 8, 1978)

Day-to-day credit was in unexpectedly short supply in the London money market yesterday, following a forecast of a slight surplus on the day. The excess of Government disbursements over revenue payments to the Exchequer was not as large as expected, although the market was also helped by a slight fall in the note circulation, and modest surplus balances carried over by the banks.

These factors were outweighed by the unwinding of a purchase and resale agreement of bills, and a net take-up of Treasury bills.

The amount of assistance given by the authorities was probably rather more than the market should have required, however, and once again banks are expected to bring forward surplus balances, which may go some way to relieving the overall shortage of funds expected today.

A very large amount of help was given by buying a large number of Treasury bills from the discount houses, and a small amount of local authority bills.

Discount houses paid 8-9 per cent for secured call loans yesterday, with early money commanding 8¼-8¾ per cent.

Rates in the table below are nominal in some cases.

LONDON MONEY RATES

Aug. 30 1978	Sterling Certificate of deposit	Interbank	Local Authority deposits	Local Auth. negotiable bonds	Finance House Deposits	Company Deposits	Discount market deposit	Treasury Bills ♦	Eligible Bank Bills ♦	Fine Trade Bills ♦
Overnight	—	8⅞-9⅛	—	—	—	8⅞-9⅛	8-9	—	—	—
2 days notice	—	—	9⅛	—	—	—	—	—	—	—
7 days or	—	—	—	—	—	9¼	—	—	—	—
7 days notice	—	9-9⅛	9⅛	—	9¼	—	8¾-8⅞	—	—	—
One month	9⅛-9[illegible]	9⅛-9[illegible]	9⅛	9½-10	9⅜	9⅛-9⅜	8⅞	8¾-8[illegible]	9⅛-9[illegible]	9⅝
Two months	9[illegible]-9½	[illegible]	—	9-9½	9[illegible]	—	9	8[illegible]-8⅞	9[illegible]-9[illegible]	9⅝
Three months	8⅝-9[illegible]	9¼-9⅜	9½	9-9½	9½	9⅝	9	8[illegible]-8⅞	9[illegible]	9⅝
Six months	9[illegible]-9⅝	9½-9⅝	9½	9-9⅜	9¾	—	—	—	9[illegible]-9¼	10
Nine months	9¾-9[illegible]	9⅝-9[illegible]	—	9¼-9⅞	9⅞	—	—	—	—	—
One year	9[illegible]-9⅝	9[illegible]-9[illegible]	9⅞-10	9⅝-10	10	—	—	—	—	—
Two years	—	—	10⅜-10¾	—	—	—	—	—	—	—

Local authority and finance houses seven days' notice, others' seven days fixed. * Longer-term local authority mortgage rate nominally three years 11⅛-11¼ per cent; four years 11¼-11½ per cent; five years 12 per cent. ♦ Bank bill rates in table are buying rate for prime paper. Buying rates for four-month bank bills 9 5/16-9 7/32 per cent; four-month trade bills 9⅝ per cent.

Approximate selling rates for one-month Treasury bills 8 11/16 per cent and two-month 8 23/32-8¾ per cent; and three-month 8¾-8 15/16 per cent. Approximate selling rate for one-month bank bills 9 1/32-9 1/16 per cent; two-month 9 1/16-9 3/32 per cent; and three-month 9 1/16-9 3/32 per cent. One-month trade bills 9½ per cent; two-month 9½ per cent; and also three-month 9½ per cent.

Finance House Base Rates (published by the Finance Houses Association) 10½ per cent from August 1, 1978. Clearing Bank Deposit Rates (for small sums at seven days' notice) 6-7 per cent. Clearing Bank Base Rates for lending 10 per cent. Treasury Bills: Average tender rates of discount 8.8062 per cent.

MONEY RATES

NEW YORK

Prime Rate	9-9¼
Fed Funds	8.5
Treasury Bills (13-week)	7.40
Treasury Bills (26-week)	7.62

GERMANY

Discount Rate	3
Overnight	3.45
One month	3.5
Three months	3.7
Six months	4.15

FRANCE

Discount Rate	9.5
Overnight	7
One month	7.25
Three months	7.375
Six months	7.8125

JAPAN

Discount Rate	3.5
Call (Unconditional)	4.5
Bills Discount Rate	4.625

WORLD STOCK MARKETS

Wall St. firm despite increased Prime Rate

INVESTMENT DOLLAR PREMIUM
$2.60 to £1—91% (90¼%)
Effective $1.9410—42¾% (42¼%)

SHAKING OFF a rise in the Prime interest rate, stocks finished narrowly higher in active trading on bargain hunting after two days of declines.

However, concern that U.S. inflation may prove tougher to control than had been hoped caused some weakness late in the day.

The Dow Jones Industrial Index rose 0.52 to 880.72 and other popular averages showed gains. Advances led declines 802 to 672 on a volume of 37.75m shares against 33.78m shares on Tuesday. The Transport Index put on 1.51 at 249.27 and Stocks rose 0.75 to 303.21. Utilities edged ahead 0.27 to 106.43.

Chase Manhattan led a move by a handful of major banks to a prime rate of 9¼ per cent up from 9 per cent previously. The move came sooner than expected but had been widely discounted.

The market was under pressure in the morning from the early prime rate move and from Tuesday's report of a widening of the U.S. trade deficit in July, but bargain hunters and some short-covering lifted prices in the afternoon.

Mr. Henry Wallich, Federal Reserve Board member, said inflation could be in the 8 per cent range this year and might rise further, leading to some investor nervourseness later in the sesion.

Some buyers may also have moved to the sidelines late in the day to await the delayed report on leading economic indicators which was originally to have been published today.

Speculation in gaming issues continued to be heavy, causing some concern. An internal memo to brokers at Drexel Burnham Lambert urged "extreme caution" on gambling stocks and expressed alarm at their "irrational market behaviour."

Nevertheless, Bally Manufacturing bounded ahead $9¾ to $66, Caesar's World $3½ to $49¾, Harrahs $6 to $40¾, MGM $3¾ to $53¼ and Del E. Webb $3 to $34¾.

The volume leader Ramada Inns, heavily traded in recent days, weakened $⅝ to $12. It was the subject of bearish Press comment. Wurlitzer added $1½ to $14¾ despite denying rumours it planned to build gambling machines.

Todd Shipyard lost $2¾ to $29¾. A Federal court dismissed its $121m damages suit against the U.S. Navy.

National Airlines tumbled $3¾ to $34¼. Texas International Air said it now holds about 18 per cent of National's Common and intends to buy the 25 per cent maximum allowed by the Civil Aeronautics Board. Texas Air, on the American Exchange, eased 25 cents to $15¼.

Pan American, which also seeks to acquire 25 per cent of National, was unchanged at $8¾ in heavy turnover.

Communications Satellite dropped $3¾ to $44¼. A Federal Appeals Court overturned Government authorisation for a Comsat led consortium to set up a domestic satellite service.

Steel shares weakened on a report that steel imports rose 31 per cent in July despite the trigger price mechanism.

American Stock Exchange prices rose sharply in the heaviest trading in two and a half years. The Amex index gained a sizzling 2.13 to 167.73, the second highest one-day rise since its inception in September 1973. Volume of 7.32m shares was the highest since 8.55m shares changed hands in February 1976. Yesterday's turnover was 6.08m shares.

Kaiser Industries topped the active list adding ⅛ to $2⅛. Resorts International "A" climbed five points to $117 and Golden Nugget rose $5¾ to $40¼. Its president recently donated $50,000 to a pro-casino grou pin Florida which votes on a gaming referendum in November.

Canada

Canadian share prices closed firmer in busy trading. Banks declined slightly but other major indices were higher, with the Papers index up 6.10 at 138.80 and Industrials up 1.74 at 197.49 in Montreal. The Comoposite Index rose -.17 to 205.61.

Gulf Oil Canada climbed $2¾ to $30¼, while Price Company at $18¼, Canadian Cellulose at $89¼ and B. C. Forest Products at $18 rose $1. Macmillan Bloedel at $22¼ and Abitibi at $16¾ gained ¾ while Domtar at $21½ and Pacific Pete at $37¼ added 50 cents. Imperial Oil "A" at $20¾ and Seagram at $28½ put on ¾ while Noreen Energy at $15¾, Noranda "A" at $31½ and Molson "A" at $20½ edged up 25 cents.

Dofasco "A" at $27 and Hudsons Bay Company at $22¾ shed 50 cents while Westcoast Transmission at $12 and Labatt "A" at 21½ gave up ⅜.

Closing volume totalled 726,598 shares.

Toronto share prices also closed higher in active trading as gains in Paper and Oils pushed the composite index up nearly seven. The Paper Index, up 35.9 points, posted a record single day rise. Advances outnumbered declines 250 to 191. The Toronto Industrial Index gained 6.8 to 1215.7 and Golds advanced 8.7 to 1547.2.

Dome Pete rose $5¼ to $77¾. The company said it could not explain the stock's activity. Among Papers, Abitibi, the most active issue, rose $1¾ to $16½ on 162,504 shares. Great Lakes Paper put on $1¾ to $35 and B. C. Forest $1¼ to $18. Closing volume totalled 4,494,190 shares against 4,127,734 shares on Tuesday.

Australia

Markets were mixed with interest centring on firmer Banks and Uraniums. The Bank of NSW gained 4 cents to A$6.80, the CBC 3 cents to A$1.97 and the CBA 8 cents to A$2.53. Among Industrials, Daltons gained 16 cents to A$1.61 on the revised bid by Carpenter, and Westfield rose 8 cents to A$5.74 on bid speculation. BHP lost 4 cents to A$8.10 but, CSR firmed 1 cent to A$3.30 and TNT 2 cents to A$1.27.

Uraniums were quieter, with Queensland Mines losing 25 cents to A$3.65 and Kathleen Investments 5 cents to A$3.10. Peko and EZ Industries were steady and Pancontinental gained 10 cents to A$16.50. Central Norseman rose 50 cents to A$11.20 on the higher gold price. CRA recovered after its sharp drop in half-year earnings to close 1 cent down at A$3.42. The Sydney index moved up to a 1978 high of 538.59.

Tokyo

Japanese share prices rose in fairly active trading, with selective buying over a wide front. The Tokyo Stock Exchange index was up 0.99 at 422.84.

Constructions, Cements and other public works shares gained on expectations that the Government will implement additional reflationary measures to ensure Japan's 7 per cent economic growth target for 1978. Export-orientated shares including Electricals, Vehicles and Cameras, closed higher after recouping initial losses following the yen's fresh appreciation in Tokyo. Steels, Pharmaceuticals, Ceramics and Electric Cables were also higher.

Paris

The market remained weak with the bourse index 0.7 lower at 73.7. Among Banks, Credit du Nord lost some ground after announcing a cut in its base rate to 8.90 from 9.05 per cent. St. Gobain Pont a Mousson eased 70 centimes after announcing it intended making a capital issue. Electricals and Construction were mixed. L'Oriol and Aquitaine both lost Frs9 while Carrefour and Gervais each fell Frs10. Peugeot Citroen declined by Frs8 while Pernod Picard was Frs9 lower. BIC fell Frs21 to Frs468 and Cie Boncaire lost Frs13 to Frs404.

Brussels

Belgian shares were mostly lower in the wake of Wall Street. Among the losers were Asturienne, Vieille Montagne, Cockerill, Gevaert, and Cometra. Solvay fell BFrs 10 and Sofina BFrs 20. Gold Mines were firm *in line with the London fixing.* Petrofina was unchanged but its U.S. and Canadian units eased.

Germany

Share prices were mixed in closing trading with demand registered particularly among foreign investors on account of the weaker dollar. GHH led Engineerings DM2.30 higher while Veba led Industrials DM1.40 lower. In Motors, VW and Mercedes both shed DM2. Banks and Steels were steady, with the exception of Mannesmann, which gained DM2. In Stores, Karstadt eased DM1 against the trend. The two-tranche German Federal Government bond was well received in the market. Public Authority issues were mixed, showing losses of up to 40 pfennigs and gains of up to 15 pfennigs.

Amsterdam

Share prices closed mostly weaker following the lower Wall Street and the weakness of the dollar. Royal Dutch and Akzo led declines among Dutch Internationals, closing Fl 1.60 and 90 cents lower, respectively. Elsewhere weak shares included Elsevier, VMF-Stork, OCE-Van Grinten and Deli. Shippings and Transports were mostly firmer with KNSM Fl 3.20 higher on the announcement of results. Pakhoed, too, was firm.

Milan

Prices closed generally higher in fairly active trading. However, market sentiment was still influenced by Bastogi Finanziaria SPA proposed incorporation of Beni Stabili. Both companies' shares closed lower.

Fiat, both Pirelli and Olivetti Privileged gained in mixed Industrials, while Mediobanca in Banks and Assicurazioni Generali in Insurances were marginally higher.

Switzerland

Prices closed barely steady in generally quiet dealings. Leading Banks and Insurances fluctuated narrowly, while more active Motor-Columbus and Oerlikon-Buehrle closed steady. Industrials followed the general trend.

NOTES: Overseas prices shown below exclude $ premium. Belgian dividends are after withholding tax. ◆ DM 50 denom. unless otherwise stated, yields based on net dividends plus tax. ♥ Pta 500 denom. unless otherwise stated. ♣ DKr 100 denom. unless otherwise stated. ♦ SwFr 500 denom. and Bearer shares unless otherwise stated. ¶ Y50 denom. unless otherwise stated. $ Price at time of suspension. a Florins. b Schillings. c Cents. d Dividend after pending rights and/or scrip issue. e Per share. f Francs. g Gross div. %. h Assumed dividend after scrip and/or rights issue. k After local taxes. m % tax free. n Francs: including Unilac div. p Nom. q Share split. s Div. and yield exclude special payment. t Indicated div. u Unofficial trading. v Minority holders only. y Merger pending. * Asked. † Bid. § Traded. ‡ Seller. z Assumed. xr Ex rights. xd Ex dividend. xc Ex scrip issue. xa Ex all. Δ Interim since increased.

Indices

NEW YORK—DOW JONES

	Aug. 30	Aug. 29	Aug. 28	Aug. 25	Aug. 24	Aug. 23	1978 High	1978 Low	Since Compilat'n High	Since Compilat'n Low
Industrial	880.72	880.20	884.88	895.55	897.85	897.00	900.12 (17/8)	742.12 (28/2)	1051.70 (11/1/73)	41.22 (2/7/32)
H'me B'nds*	89.02	89.15	89.21	88.88	85.81	88.97	90.86 (4/1)	86.73 (11/7)	—	—
Transport	249.27	247.76	248.78	252.08	254.41	251.66	265.41 (24/8)	199.31 (9/1)	279.88 (7/2/69)	13.23 (8/7/32)
Utilities	106.43	106.16	106.09	106.38	106.48	106.65	110.98 (4/1)	102.84 (22/2)	163.32 (20/4/69)	10.58 (28/4/42)
Trading vol. 000's†	37,750	33,780	31,780	36,180	38,500	39,710	—	—	—	—

* Basis of Index changed from August 24

Ind. div. yield %	Aug. 25	Aug. 18	Aug. 11	(Year ago approx)
	5.36	5.24	5.26	4.25

STANDARD AND POORS

	Aug. 30	Aug. 29	Aug. 28	Aug. 25	Aug. 24	Aug. 23	1978 High	1978 Low	Since Compilat'n High	Since Compilat'n Low
‡Industrials	114.63	114.81	116.17	116.27	116.59	116.19	116.58 (24/8)	95.52 (6/3)	134.84 (11/1/73)	3.52 (30/6/32)
§Composite	103.47	103.59	103.96	104.90	105.08	104.91	106.08 (17/8)	86.90 (6/3)	125.85 (11/1/63)	4.40 (1/6/32)

	Aug 23	Aug. 16	Aug. 9	Year ago (approx.)
Ind div. yield %	4.69	4.70	4.70	4.57
Ind. P/E Ratio	10.02	9.99	9.97	9.90
Long Gov. Bond yield	8.37	8.54	8.52	7.61

N.Y.S.E. ALL COMMON

Aug. 30	Aug. 29	Aug. 28	Aug. 25	1978 High	1978 Low
58.48	58.38	58.78	58.22	58.26 (24/8)	48.37 (6/3)

Rises and Falls

	Aug. 30	Aug. 29	Aug. 28
Issues traded	1,876	1,912	1,918
Rises	802	551	469
Falls	672	974	1,114
Unchanged	402	387	335
New Highs	—	—	109
New Lows	—	—	7

MONTREAL		Aug. 30	Aug. 29	Aug. 28	Aug. 25	1978 High	1978 Low
	Industrial	197.49	196.75	197.29	199.71	201.94 (18/8)	162.90 (16/2)
	Combined	205.61	204.44	206.10	208.16	209.82 (18/8)	170.82 (30/1)
TORONTO	Composite	1215.7	1,208.9	1217.6	1250.2	1238.4 (18/8)	998.2 (30/1)
JOHANNESBURG	Gold	254.9	245.9	244.7	245.4	272.0 (14/8)	186.0 (21/4)
	Industrial	262.5	262.4	261.9	263.5	264.5 (23/8)	194.9 (15/3)

	Aug. 30	Pre-vious	1978 High	1978 Low
Australia(‡)	535.59	537.78	538.59 (30/8)	441.19 (1/4)
Belgium (‖)	98.28	98.64	101.16 (8/5)	90.45 (25/8)
Denmark (**)	97.93	97.59	98.95 (14/8)	94.00 (6/2)
France (††)	75.7	74.4	76.5 (5/8)	47.6 (6/2)
Germany (‡‡)	830.0	850.0	827.8 (23/8)	769.4 (17/8)
Holland (§§)	91.7	92.5	92.8 (28/8)	76.0 (4/4)
Hong Kong (¶¶)	678.56	684.51	690.12 (18/8)	383.44 (14/1)
Italy (‖‖)	68.63	66.14	68.17 (21/8)	55.45 (10/1)
Japan (a)	422.84	421.84	425.31 (19/7)	364.04 (4/10)
Singapore (b)	402.11	405.69	405.69 (29/8)	282.0 (9/1)
Spain (d)	102.48	102.06	110.78 (9/5)	87.86 (11/5)
Sweden (e)	396.99	396.23	408.08 (4/8)	325.74 (9/1)
Switzer'd (f)	287.6	288.4	336.96 (28/8)	279.0 (25/4)

Indices and base dates (all base values 100 except NYSE All Common — 50 Standards and Poors — 10 and Toronto 300—1,000, the last named based on 1973). † Excluding bonds. ‡ 400 Industrials. § 400 Industrials, 40 Utilities, 40 Finance and 20 Transport. ¶ Sydney All Ordinary. ‖ Belgian SE 31/12/63. ** Copenhagen SE 1/1/73. †† Paris Bourse 1961. ‡‡ Commerzbank Dec., 1953. §§ Amsterdam Industrial 1970. ¶¶ Hang Seng Bank 31/7/64. ‖‖ Banca Commerciale Italiana 1973. a Tokyo New SE 4/1/68. b Straits Times 1966. c Closed. d Madrid SE 30/12/77. e Stockholm Industrial 1/1/58. f Swiss Bank Corporation. u Unavailable.

WEDNESDAY'S ACTIVE STOCKS

	Stocks traded	Closing price	Change on day
Ramada Inns	1,632,900	12⅛	— ⅝
Pan Am Air	593,100	8⅞	—
Del Webb	482,000	34¾	+3
Bally Mnfrg.	477,200	66	+9¾
K Mart	462,700	27⅞	+ ⅜
Allen Air	429,900	13¼	+ ⅛
National Airlines	403,100	34¼	—3¾
Holiday Inns	375,400	23½	— ⅝
Fast Airline	353,500	14¼	— ⅛
Colm Pict	304,900	23	+3⅛

OSLO

Aug. 30	Price Kroner	+ or —	Div. %	Yld. %
Bergen Bank	99		9	9.1
Borregaard	79.5	—0.5	—	—
Creditbank	114		11	8.8
Kosmos	270.0	+2.5	20	7.4
Kreditkassen	109.0		11	10.1
NorskHydroKr20	222.50	—4.75	12	4.3
Storebrand	92.5	—2.5	7	7.5

BASE LENDING RATES

A.B.N. Bank	10 %
Allied Irish Banks Ltd.	10 %
American Express Bk.	10 %
Amro Bank	10 %
A P Bank Ltd.	10 %
Henry Ansbacher	10 %
Banco de Bilbao	10 %
Bank of Credit & Cmce.	10 %
Bank of Cyprus	10 %
Bank of N.S.W.	10 %
Banque Belge Ltd.	10 %
Banque du Rhone	10½%
Barclays Bank	10 %
Barnett Christie Ltd.	11 %
Bremar Holdings Ltd.	11 %
Brit. Bank of Mid. East	10 %
■ Brown Shipley	10 %
Canada Perm't Trust	10 %
Capitol C & C Fin. Ltd.	10 %
Cayzer Ltd.	10 %
Cedar Holdings	10½%
■ Charterhouse Japhet	10 %
Choulartons	10 %
C. E. Coates	10 %
Consolidated Credits	10 %
Co-operative Bank	*10 %
Corinthian Securities	10 %
Credit Lyonnais	10 %
The Cyprus Popular Bk.	10 %
Duncan Lawrie	10 %
Eagil Trust	10 %
English Transcont.	11 %
First Nat. Fin. Corp.	13 %
First Nat. Secs. Ltd.	12 %
■ Antony Gibbs	10 %
Greyhound Guaranty	10 %
Grindlays Bank	‡10 %
■ Guinness Mahon	10 %
■ Hambros Bank	10 %
■ Hill Samuel	§10 %
C. Hoare & Co.	†10 %
Julian S. Hodge	11 %
Hongkong & Shanghai	10 %
Industrial Bk. of Scot.	10 %
Keyser Ullmann	10 %
Knowsley & Co. Ltd.	12 %
Lloyds Bank	10 %
London Mercantile	10 %
Edward Manson & Co.	11½%
Midland Bank	10 %
■ Samuel Montagu	10 %
■ Morgan Grenfell	10 %
National Westminster	10 %
Norwich General Trust	10 %
P. S. Refson & Co.	10 %
Rossminster	10 %
Royal Bk. Canada Trust	10 %
Schlesinger Limited	10 %
E. S. Schwab	11½%
Security Trust Co. Ltd.	11 %
Shenley Trust	11 %
Standard Chartered	10 %
Trade Dev. Bank	10 %
Trustee Savings Bank	10 %
Twentieth Century Bk.	11 %
United Bank of Kuwait	10 %
Whiteaway Laidlaw	10½%
Williams & Glyn's	10 %
Yorkshire Bank	10 %

■ Members of the Accepting Houses Committee.
* 7-day deposits 7%, 1-month deposits 7¼%.
† 7-day deposits on sums of £10,000 and under 6½%, up to £25,000 7¼%, and over £25,000 8¼%.
‡ Call deposits over £1,000 7%.
§ Demand and deposits 7¼%.

NEW YORK

CANADA

† Bid. ‡ Asked. § Traded. ‖ New stock.

EUROPEAN OPTIONS EXCHANGE

GERMANY ◆

TOKYO ¶

AUSTRALIA

BRAZIL

Turnover: Cr 130.5m. Volume 86.7m.
Source: Rio de Janeiro SE.

JOHANNESBURG

Securities Rand $U.S.0.75½
(Discount of 34.1%)

AMSTERDAM

BRUSSELS/LUXEMBOURG

PARIS

SWITZERLAND ◆

COPENHAGEN ♣

STOCKHOLM

MILAN

VIENNA

SPAIN ♥

FARMING AND RAW MATERIALS

Locust threat in Ethiopia

GENEVA, August 29.

SWARMS of locusts are threatening crops in three north central Ethiopian provinces already affected by drought, the League of Red Cross Societies said here.

The Desert Locust Control Organisation for East Africa is trying to combat the swarms with aerial spraying but is handicapped by insufficent planes and bad flying conditions.

The drought, causing severe food shortages for nearly 2m people in Ethiopia, especially in Western Wollo province, now affects all eight districts of Tigray province and three districts of Gondar province.
Reuter

U.S. palm oil imports fall

WASHINGTON, August 30.

U.S. IMPORTS of palm oil during July fell to 19.1m lbs from 26.4m in June and were down from 35.0m in July 1977, census bureau figures show.

The bulk of the July imports came from Malaysia (19.0m lbs). Other suppliers were Canada and Liberia.

In the first seven months of 1978 palm oil imports were 219.7m lbs, compared with 333.4m lbs in the comparable period a year ago.
Reuter

Kill hens to save egg trade, say farmers

BY OUR OWN CORRESPONDENT

THE EGGS AUTHORITY is under pressure from farmers to introduce a subsidised slaughter scheme to kill off 2.5m surplus laying hens. A decision is expected at a meeting on Thursday next week.

Appealing for action yesterday, Mr. Mike Weller, chairman of the National Farmers' Union poultry committee, said egg producers should be compensated with a payment of 20p for every bird killed.

The cost, he said, would be borne by the egg industry as a whole. A special levy could be collected on every laying chick sold.

Other proposals before the Eggs Authority, the industry's main marketing and advisory organisation, include a plan to sell off 11m eggs a week cheaply to processors.

This would reduce the glut of eggs depressing the retail market and push up prices in the shops.

But Mr. Weller said it would not get to the root of the problem. Many more young birds were approaching the age when they would start laying and "in no time we would be back to square one."

Egg industry representatives have had a series of meetings in recent weeks, and Mr. Weller claimed there was general support for the hen culling option. However, he added, some sectors had doubts because of the necessity to have such a scheme blessed by the Government and then by the EEC Commission in Brussels.

There were fears that by the time all the proper channels had been negotiated the crisis would be out of control.

However, Mr. Weller insisted that if all interested parties were to back the plan and the industry itself bore the cost, there was a good chance that the scheme could be in operation by the beginning of October.

Egg producers have been losing money for more than five months although they have consistently ignored warnings that they were over-stocking with young birds. Now, the NFU says, losses are costing farmers 10p a dozen.

The cost of culling 2.5m hens would be about £500,000, he said. Compared with the industry's current losses of £2m to £2.5m a week this was "chickenfeed."

A culling scheme was first proposed in June, when Mr. Denis Cummings, chief executive of the Eggs Authority, suggested that the slaughter of 500,000 old hens would restore balance to the market.

But a meeting of the authority decided such action was premature.

Bumper jute crop brings price slump

By Our Own Correspondent
CALCUTTA, August 30.

A BUMPER Indian raw jute crop variously estimated between 7.5m and 8m bales has brought prices crashing in the growing areas (North Bengal, Assam and Bihar) to much below the statutory minimum of Rs.150 a quintal. Only a month ago raw jute prices ruled at Rs.300 a quintal as against the official ceiling of Rs.225.

According to West Bengal's Minister of Agriculture the prices ruling in most of the growing areas in West Bengal (which grows more than 50 per cent of the Indian crop) are now between Rs.125 and Rs.140 a quintal.

The Jute Corporation of India, which is to make price support purchases, has been asked to intensify its purchases by itself as well as through its co-operatives, to boost prices in the market. The Jute Commissioner has also raised the limit for raw jute stocking by mills from four weeks to eight weeks.

EEC sugar exports

BRUSSELS, August 30.

THE EEC Commission authorised sales of 43,000 tonnes of white sugar for export at its weekly tender today, reports Reuter. Last week export authorisations were granted on 45,000 tonnes of whites.

The maximum export rebate was cut to 25,640 units of account per 100 kilos from 25,649 ua the previous week.

Our Kingston correspondent writes: The current Jamaican sugar crop has so far yielded 286,941 tons, and there are indications that when the crop closes in a few weeks this will have reached 300,000 tons.

Production so far represents a recovery after an uncertain start to the season when several factories were closed by strikes. One of the Island's larger factories is now closed by a strike.

Zinc price up

TORONTO, August 30.

HUDSON BAY Mining and Smelting Company said it raised its prices for all grades of zinc sold in Canada by 1.75 cents a pound, effective immediately.

The company said the new price for high grade and prime western zinc was 35.75 cents a pound, continuous galvanising grade with lead added, 36 cents and special high grade and galvanising grade alloyed with lead and aluminium 36.25 cents.
Reuter

Anarchy in French potato market

BY CHRISTOPHER PARKES

THE DIFFICULTIES faced by British potato growers pale almost to insignificance when compared with the hazards confronting French farmers and the organisations set up to put an end to the anarchy ruling in their market.

The evidence to support this view is published at length in a report, released yesterday, which can only strengthen the British Government's resolve to insulate the UK market as far as possible from the unwelcome disruptive pressures which plague the Continental potato industry.

Fraud, the author declares, is commonplace among those in France charged with supplying marketing and statistical data. Other vital market information is simply not available because of a lack of interest among many growers and merchants.

"To many, growing and handling potatoes is seen as a gamble and is often welcomed as such," the report says.

But the main underlying fault in the industry springs from the multiplicity of interests involved. At the last count, in 1970, there were 900,000 farmers growing potatoes in France. About 750,000 of these grew less than half a hectare (about 1 acre). These small-scale producers see little benefit in co-operating with the authorities or even joining a producer group or co-operative.

They can stop and start potato growing at will since they have no heavy investments in machinery or storage at risk.

And although the private wholesale trade is "portrayed as having few virtues, being circuitous and costly, as well as exploiting farmers" it is still handling the bulk of the French potato crop.

Government-backed co-operatives and similar groups have had a singular lack of success in attracting the growers.

"Interest in co-operative activities appears to have been waning since the end of the 1960s with some organisations disappearing and the membership of others declining," the report says.

"This result is unfortunate and follows mainly as a result of a short-sighted policy to promote producer groupings as a means of organising a particularly anarchic market.

"In failing in this role the co-operative sector's confidence in its own potential may well have been seriously shaken."

The author is quick to draw the comparison between the dismal failure of producer groupings to reduce the disorder in the French market and the proposals drafted by the EEC Commission in Brussels for a Common Market organisation governing potatoes.

The structures proposed would depend entirely for their success on producer groups which would be responsible for market management and the application of support measures.

The Dutch, the author concludes, would doubtless favour an unfettered free EEC market in which competitive forces would finish off the inefficient, small-scale producers.

But since there are some 750,000 of these in France alone to be considered, the social repercussions preclude such a ruthless approach.

So the final resolution of the difficulties facing the potato sector in France must await the improvements in the agricultural industry as a whole being engineered by the French Government.

"In the meantime, however, the proposals put forward by the Commission of the EEC are unlikely to provide any substantial alleviation from the problems of instability and it seems that the Community is a long way from insulating itself from the potential disruptive effects of the French maincrop potato market."

The report, which was sponsored by the Potato Marketing Board, is published at a time when the ultimate Common Market weapon—action in the European Court of Justice—is being brought to bear on the intractable British Government, which has ignored entreaties and refused to obey an order from Brussels to open its frontiers and allow free trade in maincrop potatoes.

It is perhaps a pity that the wealth of evidence it provides was not available to Whitehall earlier this year when it was pleading its case with Brussels and before the force of law was brought to bear.

The French Maincrop Potato Marketing System, Publications Department, Centre for European Agricultural Studies, Wye College, Ashford, Kent. Price £5.50, cash with order.

THE POTATO Marketing Board yesterday urged all growers in Britain to take up its offer to buy 10 per cent of their crops. Reluctant farmers were warned that the Board might not be able to raise market prices fully to the guaranteed level over the season.

"Much will depend on the size of any surplus and on the outcome of the pending case in the European court regarding the import ban in the UK," the board said in its weekly market report.

Market prices have steadied a little this week, although supplies are still adequate, and average returns are still well short of the guaranteed level. Lowest price recorded is £20 a tonne and the highest £43.50.

U.S. farmers attack futures trading

SOME MAINE potato farmers are petitioning Congress to ban futures trading in their principal product. "We should get back to marketing potatoes rather than playing around with paper," one farmer declared.

Theoretically, producers and users of a commodity can protect themselves against price fluctuations by selling or buying contracts for future delivery of the commodity — the practice known as hedging.

In practice, farmers tend to be "suspicious that futures are doing them no good," according to Mr. Jim Lilly, editor of Prairie Farmer, a publication based in Oak Brook, Illinois. In a recent survey, the magazine found 55.9 per cent of more than 200 farmers said they didn't know enough about hedging to trade futures.

"I think lack of understanding is definitely the biggest reason" for farmers' apparent edginess towards futures trading, says Mr. John Helmuth, an Agriculture Department economist in Washington.

In a survey Mr. Helmuth conducted for the Commodity Futures Trading Commission, 95.1 per cent of farmers said they did not buy or sell any futures contracts in 1977. Of those who did, only 39.7 per cent traded commodities they used or produced themselves. That means the majority of farmers who trade futures aren't hedging but speculating, Mr. Helmuth says.

The latest effort to have futures banned is a Bill before the Senate, sponsored by Maine Senators Edmund Muskie and Mr. William Hathaway, both Democrats. It would ban all U.S. potato futures trading, most of which takes place on the New York Mercantile Exchange.

The Bill is not likely to get a hearing this year and many experts think it has little chance of passage, but its presentation indicates the deep-seated feelings among Maine's highly independent farmers.

Some growers claim that because the exchange's contract covers only Maine potatoes, rather than the much more widely-grown Idahoes, price movements are exaggerated.

But other growers, particularly larger, more successful ones, say futures do benefit farmers. These farmers tend to trade futures more than smaller ones, one study found. Many experts believe participation in futures trading increases with a farmer's acreage, education and income.

Some analysts say potato farmers, like growers of other commodities, use futures exchanges as scapegoats for low prices in the face of rising costs.

Much of the controversy centres on the role of speculators, for whom growers use such terms as "big-city, fast-buck artists gambling on the board."

Analysts counter that speculators play a key role in futures markets by assuming a risk that hedgers are not willing to take. Speculators make markets more liquid by bridging gaps between buyers and sellers, analysts add. Without speculators, prices might be more volatile, some say.
AP-Dow Jones

Coconut oil output expected to rise

WORLD COCONUT OIL output in the 1977-78 marketing year ending next month increased by only 45,000 tonnes to 2.8m. tonnes from just over 2.75m last season, the Hamburg-based weekly publication, Oil World estimates.

The increase largely reflects a 22 per cent rise in Philippines output to 1,175,000 tonnes from 962,000 in 1976-77 which more than offset a 15 per cent drop in Indonesia's output to 520,000 from 610,000 tonnes last season.

The publication notes that in an effort to make up for its smaller domestic production this season, Indonesia had imported large quantities of coconut oil from the Philippines.

It also reports that the percentage of coconut oil making up total Philippines exports of copra and oil has continued to increase. Its coconut oil exports this season are expected to rise to 950,000 tonnes from 742,000 last season, while copra exports are forecast at 505,000 compared with 534,000 tonnes in 1976-77.

Oil World expects the trend of oil over copra exports to continue.
Reuter

Brighter hopes for British wool

BY OUR COMMODITIES STAFF

THE British Wool Marketing Board paid out £2.36m last year to keep British farmers' returns up to the guaranteed level.

But the Board is quite happy about the situation. "For the third year running we shall be making no call on public funds to maintain the wool guarantee," Mr. Brian Dunn, the Board's managing director, said. "We started last season with a surplus of over £7m in the special account, after having paid back everything that was due to the Treasury from previous years.

"Now, even though prices for our wool at auction last year averaged almost 8p a kilo below the guaranteed price (110p a kilo), we have been able to meet the shortfall from our own resources." He said the Board still had more than £4.5m to meet any future deficiencies before the present financial agreement with the Government runs out in 1980.

The Board is hopeful, however, that there will be no further drain on its resources in the present season. Auction prices have picked up recently and are now close to the guaranteed level.

"If this trend continues," Mr. Dunn said, "it means we shall take very little, possibly nothing, out of our reserves to support the wool guarantee this year." British wool exports have been buoyant so far this year with first half sales reaching £204m. A record £41m-worth of British wool was exported in June.

However, Mr. Dunn had one note of caution. "We cannot really detect any sustained upturn in the economies of the world's major wool-consuming countries. So while we welcome the present improvement in market prices, we do not see them as the start of any major move upwards."

The Board's annual report shows that the 1977 UK wool clip was 32.3m kilos, 1.3m or 3.9 per cent below the 1976 total. The fall was particularly marked in South Western regions of England (down 7.1 per cent) and in Scotland (down 5.4 per cent).

At April 30 there were 86,578 producers on the Board's register, 890 or 1 per cent fewer than a year earlier.

However, the steady fall in the number of registered producers, which began in 1963, now appears to have levelled off and the Board expects that producers coming back into sheep will offset those leaving the register because of farm amalgamation and other causes.

COMMODITY MARKET REPORTS AND PRICES

BASE METALS

COPPER—Lost ground on the London Metal Exchange. Rumours of overnight Chinese purchases saw forward metal move up to £752 on the pre-market and hold steady at that level following some good covering. This trend was reversed in the afternoon, however, as stop-loss selling on Comex caused the price here to fall to £744. Fresh buying emerged at this level and forward metal lifted to £747 before easing back to close at £745.5 on the late kerb. Turnover 22,625 tonnes.

COPPER	a.m. Official	+ or —	p.m. Unofficial	+ or —
	£	£	£	£
Wirebars				
Cash	734.5-5	-7	731-2	-4.5
3 months	749.5-50.5	-8.75	746-.5	-7
Settl'm'nt	735	-7	—	......
Cathodes				
Cash	724-5	-9.5	720.5-1.5	-5.5
3 months	741-.5	-10½	738-.5	-6.25
Settl'm'nt	726	-9	—	......
U.S. Prod.	—	......	63-66	......

Amalgamated Metal Trading reported that in the morning cash wirebars traded at £735, three months £754, 53.5, 53, 52, 51.5, 51, 50. Cathodes, three months £741. Kerb: Wirebars, cash £734.5, 32, three months £750, 49.5, 49, 46, 47.5, 48. Afternoon: Wirebars, three months £745, 45.3, 45, 44.5, 44, 44.5, 45, 45.5, 46, 46.5, 47, 46.5. Cathodes, three months £738.5. Kerb: Wirebars, three months £746.5, 47, 46.5, 46, 46.5, 47, 47.5, 47, 46.5, 45.5.

TIN—Higher in fairly active trading. The steadiness of the Penang market saw forward standard metal open at £6,650 and rise to £6,690 in the morning rings with a feature of trading being the absence of the usual hedge selling. The firmness extended into the afternoon with forward metal finally £6,700 on the late kerb. Turnover 1,230 tonnes.

TIN	a.m. Official	+ or —	p.m. Unofficial	+ or —
High Grade	£	£	£	£
Cash	6720-5	+77.5	6750-70	+105
3 months	6710-30	+68	6715-35	+55
Settlem't	6725	+75	—	......
Standard				
Cash	6720-5	+77.5	6750-70	+105
3 months	6690-5	+47.5	6695-700	+50
Settlem't	6725	+75	—	......
Straits E.	$1767	+2	—	......
New York	—		*592.50	......

Morning: Standard, cash £6,720, 30, 25, three months £6,670, 90, 85, 90, 95. Kerb: Standard, three months £6,690, 85, 90. Afternoon: Standard, three months £6,695, £6,700, £6,695, 90, £6,700, £6,690.

LEAD—Barely changed. After rising to £351 on the pre-market reflecting the early steadiness in copper and some hedge buying and chartist support forward metal fell back to £346.5 on the late kerb at £347.5. Turnover 5,400 tonnes.

LEAD	a.m. Official	+ or —	p.m. Unofficial	+ or —
	£	£	£	£
Cash	341-.5	-1.25	342.5-3	-.25
3 months	346.5-7	+.25	347-.5	+.5
Sett'm'nt	341.5	-1.5	—	......
U.S. Spot	—	......	*31.44	......

Morning: Three months £348, 49, 49.5, 50, 48.75, 49, 48, 47.5, 47, 46.5. Kerb: Three months £346, 46.5. Afternoon: Three months £346, 46.5, 47, 47.25. Kerb: Three months £347, 46.5.

ZINC—Slightly firmer, and following the trend in copper and lead. Forward metal moved up to £328.5 in the morning rings but then eased owing to profit-taking which left the price around £327 on the late kerb. Turnover 3,525 tonnes.

ZINC	a.m. Official	+ or —	p.m. Unofficial	+ or —
	£	£	£	£
Cash	318.5-9	-.5	318.5-9.5	+.375
3 months	326.5-7	-.5	326.5-7	+.375
S'ment	319	-.5	—	......
Prim.west	—	......	*29.51	......

Morning: Cash £318.5, three months £328, 28.5, 28, 27.5, 26.5. Kerb: Three months £326.5. Afternoon: Three months £326, 27. Kerb: Three months £326.5.
* Cents per pound. $ $M per picul.

SILVER

Silver was fixed 1.25p an ounce higher for spot delivery in the London bullion market yesterday at 284.45p. U.S. cent equivalents of the fixing levels were: Spot 553.6c, up 9.5c; three-month 562.7c, up 10.2c; six-month 573.5c, up 10.3; and 12-month 595.7c, up 10.5c. The metal opened at 283½-284½p (552-555½c) and closed at 284½-285½p (553½-554½c).

SILVER per troy oz.	Bullion fixing pricing	+ or —	L.M.E. close	+ or —
Spot	284.45p	+1.25	284.85p	+0.4
3 months	291.3p	+1.5	291.85p	+0.9
6 months	298.7p	+1.8	—	......
12 months	314.2p	+1.6	—	......

LME—Turnover 375 (170) lots of 10,000 ozs. Morning: Three months 291.7, 1.6, 1.5. Kerbs: Three months 291.6, 1.5. Afternoon: Three months 290.9, 91, 1.5, 1.6, 1.7, 1.8, 1.9. Kerbs: Three months 291.8, 1.7.

COCOA

Shortcovering combined with forward manufacturer buying kept prices fully steady through the day, Gill and Duffus reported.

COCOA	Yesterday's Close	+ or —	Business Done
No.6 Cont'l			
Sept.	1846.0-50.0	-21.5	1865.0-1825
Dec.	1843.5-44.0	+18.25	1855-1825
March	1838.0-31.0	+19.0	1855-1815
May	1813.0-20.0	+12.75	1824-1795
July	1800.0-1.0	+17.25	1810-1790
Sept.	1785.0-94.0	+17.0	1775.0-1765
Dec.	1755.0-60.0	+7.5	1765-1755

Sales: 6,099 (4,803) lots of 10 tonnes.

International Cocoa Organisation (U.S. cents per pound)—Daily price Aug. 29: 150.29 (150.91); Indicator prices Aug. 29: 15-day average 152.34 (152.29); 22-day average 151.73 (151.50).

COFFEE

ARABICAS—Close (in order buyer, seller, business, sales)—Aug. 180.00-85.00, untraded; Oct. 176.00-79.00, untraded; Dec. 165.00-72.00, 65.00, 3; Feb., April, June and Aug. all unquoted. Sales: 3.

COFFEE	Yesterday's Close	+ or —	Business Done
	£ per tonne		
September	1520-25	-18	1550-1492
November	1466-68	+12	1468-1438
January	1399-1400	+11	1400-1356
March	1336-38	+10	1343-1305
May	1305-10	-7.5	1300-1275
July	1294-95	-8	1293-1256
September	1271-1300	+16	1260-1242

Sales: 2,393 (3,992) lots of 5 tonnes.

ICO Indicator prices for Aug. 29 (U.S. cents per pound): Colombian Mild Arabicas 154.00 (155.00); unwashed Arabicas 149.50 (151.66); other mild Arabicas 153.33 (152.50); Robustas ICA 1976 141.00 (140.70); Robustas ICA 1968 141.25 (144.00). Daily average 147.17 (146.77).

ROBUSTAS eased in the morning on follow-through selling and long liquidation from Tuesday's easy close, Drexel Burnham Lambert reported. Under-pinning trade support halted the decline and a firm performance in New York "C" contract prompted a rally to a last night's closing levels in mid-afternoon. Trade short-covering on the close pushed values higher still and final levels were irregularly ranged around the previous close.

RUBBER

SLIGHTLY EASIER opening on the London physical market. Fair interest throughout the day, closing on a slightly steadier note. Lewis and Peat reported a Malaysian godown price of 242 (same) cents (buyer, Sept.).

No. 1 R.S.S.	Business done	Yesterday's Close	Previous Close
Sept.	57.70-57.20	57.00-57.50	57.70-57.85
Oct.	58.40-52.60	57.60-56.25	—
Oct-Dec	58.60-58.70	58.00-58.35	58.60
Jan-Mar	60.65-60.70	60.20-60.25	60.80-60.90
Apr-Jne	62.50-62.65	62.15-62.20	62.75-62.85
Jly-Sept	64.35-64.40	63.90-64.00	64.50-64.40
Oct-Dec	65.80-65.90	65.40-65.50	65.60
Jan-Mar	67.00-67.60	67.05-67.15	67.25
Apr-Jne	69.00-69.15	68.70-68.75	—

Sales: 11 lots of 5 tonnes and 179 (155) lots of 15 tonnes.

Physical closing prices (buyers) were: Spot 55p (55.5); Oct. 56.5p (56.0); Nov. 57p (56.5).

GRAINS

LONDON FUTURES (GAFTA)—The market opened 30p higher on wheat and barley. Wheat in good volume rallied on good buying support to close about steady, 60-90p higher on the day. Barley in a thinner volume saw some initial support but selling pressure in the afternoon eased the market slightly to close 10-20 up, Acli reported.

	WHEAT		BARLEY	
Mnth	Yesterday's close	+ or —	Yesterday's close	+ or —
Sept.	83.55	-0.30	77.80	+0.20
Nov.	85.80	+0.30	80.35	+0.15
Jan.	88.85	+0.35	83.20	+0.10
Mar.	90.45	+0.30	85.65	+0.15
May	94.00	+0.35	88.10	+0.05

Business done—Wheat: Sept. 83.65-82.95, Nov. 85.80-85.20, Jan. 88.85-88.40, March 91.15-90.85, May 93.75-93.75. Sales: 304 lots. Barley: Sept. 78.10-77.70, Nov. 80.30-80.05, Jan. 83.35-83.25, March 85.90-85.85, May —. Sales: 104 lots.

HGCA—Location ex-farm spot prices. Feed wheat: Shropshire 77.90, Essex 78.10. Other milling wheat: Shropshire 84.80, Essex 83.70. Feed barley: Shropshire 72.90, Essex 72.20.

The UK monetary coefficient for the week beginning Sept. 4 is expected to remain unchanged.

IMPORTED—Wheat: CWRS No. 1, 13½ per cent, Sept. £94.00, Tilbury. U.S. Dark Northern Spring No. 2, 14 per cent, Sept. £90.50, Oct. £91.00, Nov. £92.00, transhipment East Coast, sellers. U.S. Hard Winter ordinary unquoted. Australian wheat unquoted. EEC wheat unquoted.

Maize: U.S./French first-half Sept. £100.50, second-half Sept. £100.00, Oct. £100.75. South African White Sept.-Oct. £38.50, Glasgow. South African Yellow Sept.-Oct. £39.00, Glasgow sellers.

Barley: Unquoted.

EEC IMPORT LEVIES—Effective for August 31 in order current levy plus Sept., Oct. and Nov. premiums, (previous in brackets) all in units of account per tonne: Common Wheat—80.29, rest nil (81.34, rest nil). Durum Wheat—121.33, nil, nil, 0.65 (124.48, nil, nil, 0.16). Rye—81.25, nil, nil, 1.29 (82.6, nil, nil, 0.83). Barley—82.94, rest nil (82.94, rest nil). Oats—79.44 rest nil (73.74, rest nil). Maize (other than hybrid for seeding)—75.77, nil, nil, 0.32 (76.90, rest nil). Buckwheat—all nil (all nil). Millet—41.84, rest nil (44.02, rest nil). Grain Sorghum—77.25, rest nil (78.78, rest nil). Flour Levies: Wheat or mixed wheat and rye flour—123.17 (124.64). Rye Flour—124.30 (128.40).

SOYABEAN MEAL

The market opened £1 down following the overnight Chicago market. Mixed selling drove prices to the lows of the day where buying interest emerged, encouraged by steady Chicago opening levels. Values gained most of the early losses, closing on the highs of the day, SNW Commodities reported.

	Yesterday's Close	+ or —	Business Done
	£ per tonne		
October	114.7-114.8	......	—
December	115.5-115.9	-0.55	116.20-115.00
February	116.9-117.0	-0.05	—
April	117.5-118.5	-0.50	—
June	118.5-120.0	-0.25	—
August	118.5-122.0	-0.25	—
October	118.5-125.5	-1.0	—

Sales: 14 (28) lots of 100 tonnes.

SUGAR

LONDON DAILY PRICE (raw sugar) £94.00 (same) a tonne cif for allotment shipment. White sugar daily price was fixed at £101.00 (£104.00).

Sugar Pref. Comm. Com.	Yesterday's Close	Previous Close	Business Done
	£ per tonne		
Oct.	95.50-95.60	95.70-95.75	94.75-95.40
Dec.	95.55-95.80	95.40-95.45	96.15-95.20
March	101.6-101.65	101.70-101.75	102.25-101.50
May	104.55-104.65	104.75-104.80	105.25-104.5
Aug.	108.30-108.45	108.40-108.50	108.75-108.25
Oct.	111.75-112.40	112.00-112.50	—
Dec.	115.50-115.75	115.50-116.25	—

Sales: 1,734 (1,700) lots of 50 tonnes.

Tate and Lyle ex-refinery price for granulated basis white sugar was £264.85 (same) a tonne for home trade and £154.00 (same) for export.

International Sugar Agreement (U.S. cents per pound fob and stowed Caribbean port)—Prices for Aug. 29: Daily 7.32 (7.17); 15-day average 7.18 (7.16).

WOOL FUTURES

(Pence per kilo)

Australian Greasy Wool	Yesterday's Close	+ or —	Business Done
October	[illegible]	[illegible]	[illegible]
December	[illegible]	[illegible]	[illegible]
March	[illegible]	[illegible]	[illegible]
May	[illegible]	[illegible]	[illegible]
July	[illegible]	[illegible]	[illegible]
October	[illegible]	[illegible]	[illegible]
December	[illegible]	[illegible]	[illegible]

Sales: Nil (same) lots of 1,500 kilos.

SYDNEY GREASY—Close (in order buyer, seller, business, sales)—Micron Contract—[illegible]

NEW ZEALAND CROSSBREDS—Close (in order, buyer, seller, business, sales): [illegible]

MEAT/VEGETABLES

SMITHFIELD (pence per pound)—Beef: Scotch killed sides [illegible]; Ulster hindquarters [illegible] 68.0, forequarters 35.0 to 38.8.

Veal: Dutch hinds and ends 50.0 to 56.0.

Lamb: English small 52.0 to 62.0, medium 54.0 to 56.0, heavy 52.0 to 56.0; Scotch medium 52.0 to 64.0, heavy 52.0 to 58.0; imported frozen: NZ PL 53.0 to 54.0, PM 53.0 to 54.0, YLs 50.0 to 51.0.

Pork: English, under 100 lb 37.0 to 44.0, 100-120 lb 38.0 to 42.0, 120-160 lb 35.0 to 41.0.

Grouse: Young best 180.0 to 190.0 each, old 100.0 each.

MEAT COMMISSION—Average fatstock prices at representative markets on August 30: GB—Cattle 70.27p per kg.l.w. (+0.40); UK—Sheep 141.7p per kg.est.d.c.w. (+3.3); GB—Pigs 62.2p per kg.l.w. (-0.5). England and Wales—Cattle numbers up 4.0 per cent, average price 70.24p (+0.43); Sheep up 12.8 per cent, average 142.3p (+3.1); Pigs up 19.8 per cent, average 62.2p (-0.5). Scotland—Cattle numbers down 0.2 per cent, average 70.37p (+0.33); Sheep down 31.8 per cent, average price 130.9p (+1.8); Pigs up 11.1 per cent, average 60.1p (-0.3).

COVENT GARDEN—Prices in sterling per package except where stated: Imported produce: Oranges — South African: Valencia Late 4.20-5.20; Brazilian: Valencia Late 3.50-3.80; Californian: Valencia Late 72/163 4.00-6.20. Lemons—Italian: 100/120's new crop 5.00-5.20; Spania: Trays 1.80-2.40. Grapefruit—South African: 27/72 3.30-4.35; Jaffa: 40's 4.00; Californian: Marsh Seedless 64 3.60, 56 3.80; Jamaican: 27/64 2.70-4.00. Tangerines—Brazilian: Per box 3.00-3.20. Apples—French: New crop Golden Delicious 20-lb 72's 2.65-2.90; Portuguese, Golden Delicious per pound 0.10-0.12. Pears—French: Guyot 28-lb box 4.00; per pound Italian: Guyot 0.16, Williams 0.20-0.21; French: Williams 28-lb 4.80. Peaches—Italian: 11 trays 2.60-3.00; French: 1.80-2.00. Grapes—Per pound Cyprus: Cardinal 0.28, Thompson 0.26, Rosaki 0.23; Italian: Regina 5 kg 1.80-2.20, 5 kg Cardinal 4.00. Plums—Italian: Per pound Stanley 0.15-0.18, Giant Prunes 0.10-0.12; Hungarian: Switzens 12-lb 1.80. Bananas—Jamaican: Per pound 0.15. Avocados—Kenya: Fuerte 14/24's 3.80-4.30; South African: Fuerte 3.80-4.20. Capsicums—Dutch: Per 5 kg 1.80. Onions—Spanish: 2.50-3.00; Dutch: 2.00. Tomatoes—Jersey: 1.80; Dutch: 2.00. Melons—Spanish: Yellow 8/14 2.80-3.20.

English produce: Potatoes—Per 25 kg 0.80-1.20. Lettuce—Per 12 round 0.80, Cos 1.20, Webbs 1.00. Cucumbers—Per tray 12/24's new crop 1.60-2.00. Mushrooms—Per pound 0.20-0.50. Apples—Per pound Grenadier 0.03-0.04, Lord Derby 0.06, George Cave 0.07, Bramley 0.08-0.10, Discovery 0.08-0.10, Tydeman's 0.10. Pears—Per pound Dr. Jules 0.08-0.12, Williams 0.15. Plums—Per pound Laxtons 0.06, Belles 0.10, Czars 0.06, Pershores 0.06. Tomatoes—Per 12-lb English 1.40-1.70. Cabbages—Per crate 1.00. Celery—Per head 0.08-0.10. Cauliflowers—Per 12 Lincoln 1.20-1.80. Runner Beans—Per Pound Stick 0.18. Peas—Per pound 0.06. Beetroot—Per 28-lb 0.70. Carrots—Per 28-lb 0.60-0.80. Capsicums—Per pound 0.19-0.20. Courgettes—Per pound 0.06-0.07. Onions—Per bag 1.20-1.60. Swedes—Per 28-lb 0.50-0.60. Turnips—Per 28-lb 1.00. Parsnips—Per 28-lb 1.60-2.00.

Israel stops sugar subsidy

TEL AVIV, August 30.

ISRAEL MAY have to increase its imports of sugar as a result of a Government decision to stop subsidising local sugar refiners which hitherto received the equivalent of $600 a tonne on a cost-plus basis, while the world market price is about $220.

Since farmers have already started preparing their land this year, refiners have been promised the EEC price of $460 a tonne for this crop.

Reservoir hitch

COMPLETION OF the £113m Kielder reservoir in Northumberland, which will serve Teesside industry, will be delayed by a year until late 1981 because of the discovery of soft clay and rocks at the base of the main dam.

PRICE CHANGES

Price per tonne unless otherwise stated.

	Aug. 30 1978	+ or —	Month ago
Metals			
Aluminium	£680		£680
Free market (cts)	$1045/65	+10.0	$1046/65
Copper cash W bars	£731.5	-4.5	£721
3 months do. do.	£746.25	-7.0	£741.25
Cash Cathode	£720.75	-5.5	£711.75
3 months do. do.	£738.25	-6.25	£732.25
Gold troy oz.	$208.875	+1.625	$202.875
Lead cash	£342.75	-0.25	£314
3 months	£347.25	+0.5	£331.25
Nickel	£2,580		£2,580
Free Market (cif) (lb)	$1.80 / 1.95		$1.70 / 1.85
Platinum troy oz.	£150		£128
Free Market	£136.1	-0.15	£138.45
Quicksilver (76lb)	$125-30		$125-30
Silver troy oz.	284.45p	+1.25	291.05p
3 months	291.3p	+1.5	298.45p
Tin Cash	£6,760	+105.0	£6,538.5
3 months	£6,697	+50.0	£6,448.5
Tungsten (22.04lb)	$154.26		$140.57
Wolfram 22.04 lb cif	$140/44		$151/56
Zinc cash	£318.75	+0.375	£312.5
3 months	£326.75	+0.375	£321.625
Producers	$650/680		$650/680
Oils			
Coconut (Phil)	$740		$632.5
Groundnut	£640		£640
Linseed Crude (r)	£331		£354
Palm Malayan	$589	+9.0	$532
Seeds			
Copra Philip	$480	+5.0	$438
Soyabean (U.S.)	$295	+2.5	$258
Grains			
Barley EEC			
Home Futures	£80.55	-0.1	£82.5
Maize			
French No. 3 Am	£100.5		£98
Wheat			
No. 1 Red Spring	£90	-0.5	£92
No. 2 Hard Winter	......		......
English Milling	£99.5	......	£93
Cocoa Shipment	£1,884	+18.0	£1,849
Future Nov.	£1,845.7	+18.25	£1,772.5
Coffee Future			
Nov.	£1,468.5	+12.0	£1,137
Cotton 'A' Index	74.5c	......	72.4
Rubber kilo	58p	+1.5	53.25p
Sugar (Raw)	£94	......	£96
Wooltops 64s kilo	278p	......	281p

* Nominal. † New crop. ‡ Unquoted. m June-Aug. n July-Sept. q Sept. r Oct. s Sept.-Oct. u Aug.-Sept. x Per ton. z Indicator price.

FINANCIAL TIMES

Aug. 30	Aug. 29	Month ago	Year ago
248.65	246.83	236.49	239.99

(Base: July 1, 1952=100)

REUTER'S

Aug. 30	Aug. 29	Month ago	Year ago
1458.0	1460.9	1421.5	1485.9

(Base: September 18, 1931=100)

DOW JONES

Dow Jones	Aug. 30	Aug. 29	Month ago	Year ago
Spot	374.71	370.97	353.39	368.90
Future	376.50	365.89	343.43	324.84

(Average 1924-25-26=100)

MOODY'S

Moody's	Aug. 30	Aug. 29	Month ago	Year ago
Spie Commdty	935.9	937.9	916.9	855.6

(December 31, 1931=100)

COTTON

LIVERPOOL COTTON—Spot and shipment sales amounted to 100 tonnes, bringing the total for the week so far to 239 tonnes, W. F. Tattersall reported. Minor replenishment orders were reported, with most emphasis on African, Turkish and Columbian styles.

★

GRIMSBY FISH—Supply fair, demand good. Prices at ship's side (unprocessed) per stone: Shelf cod £4.00-£5.00; codlings £3.00-£3.70; large haddock £4.50, medium £3.40-£4.00, small £2.40-£3.00; large plaice £4.60-£5.40, medium £3.90-£5.00, best small £3.60-£4.60; large skinned dogfish £8.00, medium £5.20; large lemon soles £6.30, medium £5.50; saithe £1.35-£1.90.

U.S. Markets

Strong finish by cocoa; copper falls

NEW YORK, August 30.

COCOA finished strong on aggressive Commission House and Chartist buying. Precious metals closed steady on continued speculative buying on renewed fears of accelerating inflation. Copper closed lower on continued speculative liquidation and stop-loss selling. Soyabean futures and grains closed higher, Bache reported.

Cocoa—Sept. 150.10 (153.35), Dec. 150.70 (152.10), March 153.25, May 150.70, July 148.40, Sept. 146.10, Dec. 143.55. Sales: 1,266 lots.

Coffee—"C" Contract: Sept. 150.50 (150.25), Dec. 149.75-149.80 (148.71), March 139.50-139.90, May 135.90, July 137.50-134.50, Sept. 130.00-132.00, Dec. 129.00-130.00. Sales: 835 lots.

Copper—Sept. 62.65 (63.45), Oct. 63.40 (64.15), Nov. 63.95, Dec. 64.50, Jan. 65.00, March 66.00, May 66.85, July 67.75, Sept. 68.60, Dec. 69.55, Jan. 69.95, March 70.70, May 71.40, July 72.10. Sales: 9,000 lots.

Cotton—No. 2: Oct. 63.55-63.65 (64.05), Dec. 65.70-65.75 (66.12), March 67.70, May 68.45-68.50, July 66.35-66.60, Oct. 65.50-65.65, Dec. 65.60-65.80. Sales: 5,450 bales.

*Gold—Sept. 208.80 (207.20), Oct. 208.60 (205.40), Nov. 210.10, Dec. 211.60, Feb. 214.70, April 217.90, June 221.20, Aug. 224.50, Oct. 227.90, Dec. 231.40, Feb. 234.90, April 238.40, June 241.90. Sales: 19,000 lots.

†Lard—Chicago loose not available. NY prime steam 27.62 traded (27.75 traded).

‡Maize—Sept. 216½-215½ (214½), Dec. 222½-222 (221½), March 232-231½, May 237½-237½, July 240½, Sept. 242½.

¶Platinum—Oct. 261.20-262.50 (263.60), Jan. 263.80-264.50 (265.50), April 266.50, July 268.80-269.00, Oct. 271.30-271.50, Jan. 274.40-274.60, April 277.30-277.50. Sales: 899 lots.

¶Silver—Sept. 546.60 (547.90), Oct. 552.30 (551.90), Nov. 556.40, Dec. 560.50, Jan. 564.50, March 572.90, May 581.50, July 590.30, Sept. 599.30, Dec. 613.00, Jan. 617.70, March 627.10, May 636.50, July 645.90. Sales: 12,000 lots. Handy and Harman spot bullion: 549.90 (546.80).

Soyabeans—Sept. 655-656 (645½), Nov. 643½-642 (635½), Jan. 651-649½, March 656, May 660-661, July 661-662, Aug. 657½.

‖Soyabean Meal—Sept. 169.00-168.50 (166.50), Oct. 168.70-168.50 (166.40), Dec. 170.40-170.00, Jan. 171.00-170.80, March 173.30-172.50, May 175.00-175.50, July 176.00, Aug. 176.00-176.50.

Soyabean Oil—Sept. 27.00-26.95 (26.42), Oct. 25.70-25.65 (25.37), Dec. 24.30-24.40, Jan. 24.13-24.05, March 23.70-23.75, May 23.40, July 23.10, Aug. 22.95.

Sugar—No. 11: Sept. 7.19 (7.13), Oct. 7.22-7.23 (7.20), Jan. 7.50-7.60, March 7.84-7.85, May 8.03, July 8.21-8.23, Sept. 8.43, Oct. 8.53-8.53, Jan. unquoted. Sales: 2,550 lots.

Tin—594.00-604.00 nom. (585.00-600.00 nom.).

**Wheat—Sept. 332-332½ (326½), Dec. 328½-329 (323½), March 325-324½, May 321, July 311-310½, Sept. 312½.

WINNIPEG, August 29. ‡Rye—Oct. 90.50 (91.20 bid), Nov. 91.50 asked (92.00 asked), Dec. 90.50 asked, May 94.60 bid, July 94.00.

††Oats—Oct. 71.50 bid (71.40), Dec. 71.40 asked (71.40 bid), March 71.00 asked, May 71.50 asked, July 71.00 asked.

‡‡Barley—Oct. 70.50 (70.70), Dec. 72.00 bid (71.50 bid), March 72.10 bid, May 72.10 bid, July 71.50.

§§Flaxseed—Oct. 247.20 (247.30), Nov. 247.20 bid (248.60 bid), Dec. 248.50 bid, May 251.10 asked, July 250.50.

**Wheat—SCWRS 13.5 per cent protein content cif St. Lawrence 169.03 (166.96).

All cents per pound ex-warehouse unless otherwise stated. * $s per troy ounce—100-ounce lots. † Chicago loose $s per 100 lbs—Dept of Ag prices previous day. Prime steam fob NY bulk tank cars. ‡ Cents per 56-lb bushel ex-warehouse, 5,000-bushel lots. § $s per troy ounce for 50-oz units of 99.9 per cent purity delivered NY. ¶ Cents per troy ounce ex-warehouse. ‖ New "B" contract in $s a short ton for bulk lots of 100 short tons delivered fob cars Chicago, Toledo, St. Louis and Alton. ** Cents per 60-lb bushel in store. †† Cents per 24-lb bushel. ‡‡ Cents per 48-lb bushel ex-warehouse. §§ Cents per 56-lb bushel ex-warehouse, 1,000-bushel lots. ¶¶ SC per tonne.

I.G. Index Limited 01-351 3466. 3 months copper 742.5 to 749.0
29 Lamont Road, London SW10 0HS.
1. Tax-free trading on commodity futures.
2. The commodity futures market for the smaller investor.

COMPANY NOTICE

UNION CORPORATION LIMITED
(Incorporated in the Republic of South Africa)
SHARE PURCHASE SCHEME

NOTICE IS HEREBY GIVEN that a General Meeting of members of the Corporation will be held on the Ground Floor, Union Corporation Building, 74/78 Marshall Street, Johannesburg on Thursday 14th September 1978 at 9.30 a.m. for the purpose of considering and if deemed fit, of passing with or without modification the Ordinary resolution full details of which have been posted to members.

Holders of share warrants to bearer are advised that copies of the document posted to the registered shareholders are available from the office of the London Secretaries. Details of the procedure to be followed should any holder of share warrants to bearer desire to attend in person or by proxy or to vote at the general meeting are obtainable from any of the undermentioned addresses.

Lloyds Bank International (France) Limited, 43 Boulevard des Capucines, Paris 2(e)
Credit-Suisse, Paradeplatz 8, 8021 Zurich
Banque de l'Indochine et de Suez, 96 Boulevard Haussmann, Paris 8(e)
Swiss Bank Corporation, 1 Aeschenvorstadt, Basle
London Secretaries: Union Corporation (U.K.) Limited, Princes House, 95 Gresham Street, London, EC2V 7BS

per pro UNION CORPORATION (U.K.) LIMITED
London Secretaries
L. W. HUMPHRIES

30th August, 1978

STOCK EXCHANGE REPORT

Golds enliven otherwise drab session in stock markets

Short Gilts lose ½—Equity share index down 2.8 at 503.0

Account Dealing Dates

Option *First Dealings	Declarations	Last Dealings	Account Day
Aug. 21	Aug. 31	Sep. 1	Sep. 12
Sep. 4	Sep. 14	Sep. 15	Sep. 26
Sep. 18	Sep. 28	Sep. 29	Oct. 10

* "New time" dealings may take place from 9.30 a.m. two business days earlier.

A recovery in South African Gold shares in line with sharply higher overnight U.S. advices provided some relief in dull stock markets yesterday. Equities attempted a small rally in the early trade before extending Tuesday's downturn, while Gilt-edged securities surrendered their recent stable trend because of the fresh upward pressure on American interest rates.

The absence of any positive news regarding the Government's election intentions enabled leading industrials to regain a little composure. As soon as the demand, most of which represented bear-closing, was satisfied, however, fresh small sales from the public led to a return of the previous day's uncertainty.

Highly satisfactory third-quarter figures from **BOC International**, a net 3 higher at 69p, momentarily steadied the market but after the official close quotations were drifting lower again. The FT Industrial Ordinary share index, after being 0.8 up at the first calculation, was 2.8 down at the final count of 503.0.

News of increased U.S. Prime rates confirmed earlier worries about short-term interest rate levels in that country and British Funds reacted accordingly. The shorter maturities especially began to look susceptible and few funds appeared to be available to counter the offerings which eventually brought falls extending to ½. Support was also lacking at the longer end of the market where loses ranged to ¼.

Although interest in London was limited, Gold shares benefited from a noticeable mark-up in New York overnight: this followed the dollar's slump on the announcement of the U.S. trade deficit in July. During the late London business, prices eased from the best but several heavyweight issues registered gains to a point and more.

Volatile conditions persisted in the investment currency market. Early demand found few sellers operating and the premium recovered to 93½ per cent but support waned and institutional sales increased to leave the rate only ½ higher on the day at 91 per cent. Yesterday's SE conversion factor was 0.7002 (0.7066).

Activity in Traded Options picked up, the closing total of contracts completed numbering 683 compared with the previous day's modest 287. Another reasonable business ahead of the interim results on September 7 helped activity in ICI with 119 contracts, while Land Securities and Cons Gold were close behind, recording 114 and 112 deals respectively.

Pearl disappoint

The disappointing interim figures prompted a fall of 12 to 252p in **Pearl** and served to undermine sentiment in other Insurances. Ahead of next Wednesday's half-yearly results, **Sun Alliance** dipped 10 to 568p, while **General Accident** gave up 8 to 236p as did **Phoenix**, to 254p. **Royals** relinquished 5 to 390p and **GRE** ended 4 off at 230p. Higher interim profits failed to impress **London United** which softened 3 to 184p. By way of contrast, **Matthews Wrightson** hardened 3 to 195p in anticipation of today's first-half figures.

Movements of any consequence were hard to find in a lethargic banking sector. **Fraser Ansbacher**, reflecting the return to profitability, hardened a fraction to 10¼p. **Hambros** dipped 4 to 188p and **Keyser Ullman** eased 2 to 47p. Ahead of next Tuesday's interim results, **Provident Financial** eased 4 at 111p.

Small selling ahead of the preliminary results due soon left **A. Bell** 7 cheaper at 276p.

Several features in the Building sector provided some relief from the prevailing dull and quiet conditions. **Cement-Roadstone** responded to the increased interim dividend and profits and acquisition news with a rise of 5 to 104p, while **Travis and Arnold**, up 7 further at 176p, continued to reflect approval of the acquisition of Ellis and Everard's building supplies division. Demand in a market none too well supplied with stock left **Milbury** 8 to the good at 55p. In contrast, **Tarmac**, 162p, and **Tunnel "B,"** 290p, gave up 6 apiece and **Blue Circle** fell 5 to 289p. **Phoenix Timber** came on offer at 143p, down 7, while **Nottingham Brick** eased 5 to 305p. **J. Laing "A"** closed a shade lower at 213p ahead of today's interim statement.

ICI hardened to 400p in the earlier dealings, but drifted back to 397p before settling at 398p, unaltered on the day. **Wostenholme** firmed 5 to a peak for the year of 237p.

Burton lower

Having risen sharply on Tuesday following a Press suggestion that Sears might make an offer, **Burton** issues retreated with the A coming back 8 to 169p, the **Ordinary** dipping 6 to 180p and the **Warrants** finishing 4 off at 41p following a denial from Sears. Other leading Stores continued to be overshadowed by the London Business Schools' forecast that consumer spending will slacken considerably by the end of the year. **Mothercare**, 158p, **Gussies A**, 308p, and **House of Fraser**, 162p, all lost 4, while **UDS** softened 2 to 98p and **Marks and Spencer** eased a penny more to 85p. Elsewhere, the absence of further news of the bid discussions prompted a fall of 7 to 273p in **Bourne and Hollingsworth**. **Liberty**, still on bid hopes, hardened 3 to 173p with the N/V closing 2 dearer at 163p.

Dealings in the **Audiotronic's** new 12 per cent preference shares got off to a brisk start and, after moving between extremes of 14½p and 13p, closed at 14p compared with the issue price of 10p.

Up 6 the previous day in response to the bid approach, **William Mowat** attracted renewed speculative support and closed a further 5 better at 27p, after 28p.

Electricals contributed a fairly lengthy list of sizeable losses. **Racal Electronics** fell another 10 to 316p, while numerous losses of around 4 included **Berec**, 159p, **Cableform**, 72p, and **A.B. Electronic** 124p. **Thorn Electrical** shed 6 for a two-day decline of 14 at 382p. **GEC** became an active and erratic market, moving between extremes of 308½p and 301½ before closing 2 cheaper on the day at 304p. Against the trend, small buying in a thin market lifted **Louis Newmark** 5 to 235p.

The volume of business in Engineerings was small and features were scarce. **S. W. Farmer** attracted further buying interest and closed 7 to the good at 147p, while **Howden** improved a fraction to 84½p following the proposed dividend-boosting rights issue. **Edbro** improved 4 to 219p and **Hill and Smith** gained a penny more to 88p, the latter still helped by favourable comment. **Weir**, on the other hand, gave up 3 to 125p in reaction to the disappointing first-half profits, while **Peter Brotherhood** came on offer at 126p, down 4.

Casualties in the Foods sector were largely confined to retailing concerns. **Cullen's Stores "A,"** at 142p, gave up 8 of the previous day's Press-inspired gain of 10. **J. Sainsbury** eased 2 to 223p, while **Associated Dairies**, 235p, and **Bishop's Stores "A,"** 125p, shed 3 and 5 respectively, while **Tesco** eased a penny to 50p. **Linfood** held steady at 160p in front of today's preliminary figures, while further consideration of the interim statement lifted **G. F. Lovell** 2 further to a 1978 peak of 50p.

Queen's Moat Houses hardened 2 to equal the 1978 peak of 45½p in belated response to the interim results. **Jacques Borel** edged forward ½ to £25½ on the encouraging statement which accompanied the interim figures, but **Ladbroke** remained quietly steady at 181p awaiting today's half-yearly report. On a dull note, small selling in a thin market clipped 7 from **Myddleton** at 248p.

BOC better

Against the quietly dull trend of the other miscellaneous industrial leaders, **BOC International** rose 2 to 69p in response to the third-quarter figures which were deemed to be highly satisfactory. Still reflecting the previous day's announcement that talks have begun with several major Canadian companies for the sale of Reed Paper, **Reed International** improved 2 more to 162p, after 163p. **Rank Organisation**, at 280p, lost 10 of the recent good rise which followed news of the group's joint television venture with Toshiba. **Metal Box** receded 4 to 368p as did **Pilkington**, to 624p, and **Trafalgar House**, to 131p. Elsewhere, news of the proposed £24.1m dividend-boosting rights issue which accompanied the interim results helped **BTR** to advance 7 to 340p, while **Gripperrods** rose 5 to 68p in response to the higher annual earnings. Renewed speculative support in a restricted market left **Caledonian Associated Cinemas** 10 up at 420p and further investment buying on consideration of the group's growth potential lifted **Ricardo** 4 more to 302p. **ICL** touched 388p on an investment recommendation but then reacted to close a net penny off at 385p. **Grovebell** fell 4 to 26p following the interim profits setback. **Johnson Matthey** dipped 8 to 455p and falls of 5 and 7 respectively were seen in **Vinten**, 201p and **De La Rue**, 453p.

Motors and Distributors were quiet and little changed, sentiment apparently little further affected by the critical labour situation at BL's current labours problems. **Lex Service** were notably dull, the ordinary losing 2½ to 83½p and the new nil-paid shares reacting 2 to 6½p premium. **Nelson David**, a dull market of late on the poor preliminary figures, revived with an improvement of ½ to 10½p in response to news that privately-owned company called Convey has acquired a 30 per cent shareholding.

Newspapers were inclined easier, **Associated** reacting 3 to 185p and **Daily Mail 'A'** 4 to 348p. Elsewhere, **Collett Dickenson**, 1 harder at 94p, continued firmly on bid hopes.

Oils quiet

Inclined harder at the start, Oil leaders eventually drifted lower to close with small losses on balance. **British Petroleum** finished 2 cheaper at 886p, after 890p, while **Shell** ended 4 lower at 578p. **Royal Dutch** fluctuated in line with the dollar premium and touched £45½ and £46⅞ before closing unaltered on balance at £46. Elsewhere, news that the company is selling its stake in the Cooper Basin natural gas fields of Southern Australia prompted firmness in **Burmah Oil** which touched 80p before settling at 79p for a rise of 3 on the day. Revived speculative demand pushed **Siebens (UK)** 24 higher to 382p, but **Oil Exploration**, down 4 at 206p, encountered profit-taking following the encouraging results from its latest appraisal well on block 16/17 in the North Sea.

Investment Trusts made another drab showing with capital issues particularly depressed. **Dualvest** fell 5 to 224p, while **Triplevest**, 156p, and **M and G**, 120, lost 3 apiece. **New Throgmorton** were also on offer, the warrants falling 4 to 27p and the capital shares losing 6 to 137p. **Young Company's Investment Trust** warrants, however, responded to speculative interest with a rise of 2 to 7½p.

Apart from **Isle of Man Steam Packet**, 10 cheaper at 145p, Shippings hovered around the opening levels and closed little changed.

Golds sharply higher

Among Textiles, **John Haggas** resisted the easier trend with a rise of 7 to a 1978 peak of 117p. Tobaccos moved gently lower with **BAT Industries Deferred** finishing 3 cheaper at 287p.

Guthrie, a firm market of late on bid speculation, fell 10 more to 370p on the bid denial from **Consolidated Plantations** which had been widely suggested as an interested party.

A follow-through of overnight U.S. buying following the sharply increased U.S. July trade deficit saw South African Gold shares move ahead with the Gold Mines index 8.0 higher at 181.6.

Prices were marked up substantially at the outset and edged higher throughout most of the day as renewed overseas interest was reported.

However, in the late trade some U.S. profit-taking caused a slight reaction and prices generally closed a fraction below the day's highest levels.

The bullion price added $1.625 to $206.375 per ounce.

Among the heavyweight issues, **West Driefontein** were outstanding and jumped £1⅞ to £24½, while **Vaal Reefs** put on £1 at £15½. **Western Holdings** and **Free State Geduld** were both ½ better at £21½ and £18½ respectively.

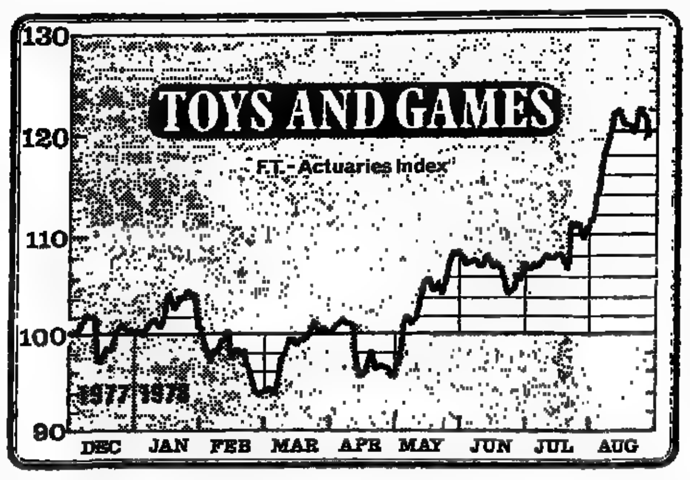
Trading in South African Financials was subdued reflecting the fluctuations in the investment dollar premium. Nevertheless, "Amgold" rose ½ to £18, **New Wits** 16 to 128p and **Anglo American Corporation** 4 to 336p.

De Beers featured with a 7 improvement to 415p, after touching 420p; a large selling order is now believed to have been completed.

The continued uncertainty in overnight Sydney and Melbourne markets coupled with the erratic movements of the investment premium deterred buyers in Australians, although the market had a firm undertone.

Conzinc Riotinto edged up a penny more to 290p despite the sharply lower profits and reduced interim. The coal producer **Oakbridge** fell 6 to 157p.

The **Rundle** oil shale partners fell heavily in overnight domestic markets and prices here were marked down accordingly. **Central Pacific Minerals** relinquished 73 to 473p and **Southern Pacific** 10 to 195p.



Apprentices compete

ELEVEN YOUNG British apprentices left London yesterday to take part in the 24th International Apprentice Competition which is being held this year in Korea.

Competitors from 16 countries will have their skills put to the test in more than 30 trades, which cover such diverse occupations as plumbing, carpentry, plastering, automobile engineering and ladies' hairdressing.

FINANCIAL TIMES STOCK INDICES

—	Aug. 30	Aug. 29	Aug. 25	Aug. 24	Aug. 23	Aug. 22	A year ago
Government Secs.	70.42	70.63	70.66	70.65	70.66	70.68	70.89
Fixed Interest	72.25	72.42	72.42	72.40	72.53	72.53	70.78
Industrial Ordinary	503.0	505.8	513.4	509.3	519.2	523.6	500.9
Gold Mines	181.6	173.6	175.9	177.3	175.2	182.4	111.9
Ord. Div. Yield	5.31	5.28	5.20	5.31	5.16	5.13	5.19
Earnings, Y'ld % (full) (*)	15.85	15.76	15.54	15.85	15.59	15.31	14.72
P/E Ratio (net) (*) (†)	8.38	8.41	8.53	8.38	8.64	8.68	9.82
Dealings marked	4,736	4,346	4,897	6,038	5,895	5,727	6,041
Equity turnover £m	—	74.07	64.53	73.24	98.02	106.87	85.82
Equity bargains total	—	14,737	15,530	16,386	21,887	20,886	16,533

10 am 506.5. 11 am 503.3. Noon 503.1. 1 pm 503.1. 2 pm 503.7. 3 pm 503.7.

Latest index 01-246 8026.

* Based on 52 per cent corporation tax. † Nil=8.16.

Basis 100 Govt. Secs. 15/10/26. Fixed Int. 1928. Ind. Ord. 1/7/35. Gold Mines 12/9/55. SE Activity July-Dec. 1942.

HIGHS AND LOWS

—	1978 High	1978 Low	Since Compilation High	Since Compilation Low
Govt. Secs.	78.58 (3/1)	68.79 (5/6)	127.4 (9/1/35)	49.18 (3/1/75)
Fixed Int.	81.27 (9/1)	70.73 (6/6)	150.4 (28/11/47)	50.53 (3/1/75)
Ind. Ord.	523.2 (22/8)	433.4 (2/3)	549.2 (14/9/77)	49.4 (26/6/40)
Gold Mines	206.6 (14/8)	130.3 (5/1)	442.3 (22/5/75)	43.5 (26/10/71)

S.E. ACTIVITY

	Aug. 30	Aug. 29
—Daily		
Gilt-Edged	152.7	145.3
Industries	171.2	157.2
Speculative	30.6	31.7
Totals	107.8	99.0
5-day Average		
Gilt-Edged	136.7	135.2
Industrials	195.5	205.2
Speculative	35.4	38.1
Totals	118.0	122.5

OPTIONS

DEALING DATES

First Deal-ings	Last Deal-ings	Last Declara-tion	For Settle-ment
Aug. 30	Sep. 11	Nov. 23	Dec. 5
Sep. 12	Sep. 25	Dec. 7	Dec. 19
Sep. 26	Oct. 9	Dec. 7	Jan. 9

For rate indications see end of Share Information Service

Money was given for the call in Audiotronic, London Brick, Reed International, Mills and Allen, Consolidated Plantations Warrants, Spillers, Status Discount, Renwick, Geo. Sturla, Western Mining, Dunlop, Corinthian British Land, Plessey, Duple International and Burton A. Sangers was the subject of a put while a double was aranged in Corinthian.

LONDON TRADED OPTIONS

Option	Ex'rcise price	October Closing offer	October Vol.	January Closing offer	January Vol.	April Closing offer	April Vol.	Equity close
BP	750	144	20	164	—		—	886p
BP	800	94	—	124	—	140	—	"
BP	850	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
BP	900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
BP	950	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
BP	1000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Com. Union	140	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	151p
Com. Union	160	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Com. Union	180	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Cons. Gold	160	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	190p
Cons. Gold	180	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Courtaulds	100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	114p
Courtaulds	110	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Courtaulds	120	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Courtaulds	130	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Courtaulds	140	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
GEC	200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	304p
GEC	220	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
GEC	240	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
GEC	260	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
GEC	280	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
GEC	300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
GEC	330	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Grand Met.	100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	116p
Grand Met.	110	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Grand Met.	120	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Grand Met.	130	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
ICI	330	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	398p
ICI	360	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
ICI	390	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
ICI	420	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
ICI	460	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Land Secs.	200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	233p
Land Secs.	220	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Land Secs.	240	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Land Secs.	260	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Marks & Sp.	70	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	85p
Marks & Sp.	80	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Marks & Sp.	90	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Marks & Sp.	100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Shell	500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	578p
Shell	550	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Shell	600	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
Totals			457		176		48	

NEW HIGHS AND LOWS FOR 1978

The following securities quoted in the Share Information Service yesterday attained new Highs and Lows for 1978.

NEW HIGHS (48)

CORPORATION LOANS (1)
L'pool 5¼pc '76-78

AMERICANS (1)
Amax

BEERS (1)
Macallan-Glenlivet

BUILDINGS (4)
Cement-Roadstone; Sharpe & Fisher; Henderson (P. C.) A; Travis & Arnold

CHEMICALS (3)
Halstead; Wolstenholme Bronze; Thurgar Bardex

STORES (3)
Bolton Textile; MFI Furniture; Liberty

ELECTRICALS (2)
Lec Refrigeration; Newmark (Louis)

ENGINEERING (4)
Edbro; Farmer (S. W.); Eng. Card Clothing; Hill & Smith

FOODS (1)
Lovell (G. F.)

INDUSTRIALS (8)
Centreway; Renwick Group; Lindsay & Williams; Russell (A.); Nu-Swift; Sale Tilney; Pentos; Watson (R. K.)

LEISURE (1)
Nationwide

NEWSPAPERS (1)
Independent

PAPER (1)
Collett Dickenson

PROPERTY (3)
HK Land; Westminster Prop.; Warnford Inv.

SHOES (1)
Ward White

TEXTILES (5)
Foster (John); Radley Fashion; Haggas (J.); Small & Tidmas; Miller (F.)

TRUSTS (3)
Jardine Japan; Haw Par; Throgmorton

OILS (2)
British Borneo; Burmah

OVERSEAS TRADERS (1)
Berisford (S. & W.)

MINES (2)
Mincorp; Pengkalen

NEW LOWS (4)

BRITISH FUNDS (1)
Treas. 15¼pc 1998

AMERICANS (2)
Colt Industries; General Electrical

INDUSTRIALS (1)
Evode

RISES AND FALLS YESTERDAY

	Up	Down	Same
British Funds	—	68	9
Corpns., Dom. and Foreign Bonds	2	15	47
Industrials	153	514	874
Financial and Prop.	33	256	227
Oils	6	20	19
Plantation	2	8	22
Mines	62	27	39
Recent Issues	4	13	21
Totals	262	905	1,257

LEADERS AND LAGGARDS

The following table shows the percentage changes which have taken place since December 30, 1977, in the principal equity sections of the FT Actuaries Share Indices. It also contains the Gold Mines index.

Gold Mines F.T.	+ 30.33
Mining Finance	+ 20.77
Mechanical Engineering	+ 20.19
Engineering Contractors	+ 19.09
Toys and Games	+ 18.55
Office Equipment	+ 18.36
Overseas Traders	+ 18.37
Contracting and Construction	+ 16.37
Electronics, Radio and TV	[illegible]
Capital Goods Group	[illegible]
Building Materials	[illegible]
Newspapers and Publishing	[illegible]
Electricals	[illegible]
Tobaccos	[illegible]
Packaging and Paper	[illegible]
Chemicals	[illegible]
Consumer Goods (Durable) Group	[illegible]
Textiles	[illegible]
Motors and Distributors	[illegible]
Wines and Spirits	[illegible]
Industrial Group	[illegible]
500 Share Index	[illegible]
Metal Forming	[illegible]
Other Groups	[illegible]

All-Share Index	[illegible]
Consumer Goods (Non-Durable) Group	[illegible]
Stores	[illegible]
Food Manufacturing	[illegible]
Oils	[illegible]
Pharmaceutical Products	[illegible]
Insurance Brokers	[illegible]
Property	[illegible]
Insurance (Life)	[illegible]
Textiles	[illegible]
Merchant Banks	[illegible]
Food Retailing	[illegible]
Entertainment and Catering	[illegible]
Breweries	[illegible]
Financial Group	[illegible]
Household Goods	[illegible]
Hire Purchase	[illegible]
Banks	[illegible]
Insurance (Composite)	[illegible]
Discount Houses	[illegible]
Shipping	[illegible]

† Percentage changes based on Tuesday, August 29, 1978 indices.

ACTIVE STOCKS

Stock	Denomination	No. of marks	Closing price (p)	Change on day	1978 high	1978 low
ICI	£1	14	398	—	414	328
Audiotrnc. 12pcPf.	10p	11	14	—	14½	13
GEC	25p	10	304	−2	317	233
Rank Organisatn.	25p	10	280	−10	290	226
Barclays Bank	£1	9	352	—	368	296
BOC Intl.	25p	8	69	+2	79	63
BP	£1	8	886	−2	926	720
Distillers	50p	8	194	−3	204	163
Beecham	25p	7	705	−2	725	583
Berisfd. (S. & W.)	25p	7	166	+4	166	98
Courtaulds	25p	7	114	−1	131	109
Lucas Industries	£1	7	322	−1	336	240
Shell Transport	25p	7	578	−4	602	484
Trafalgar House	20p	7	131	−4	167	117
Unilever	25p	7	566	−6	596	476

RECENT ISSUES

EQUITIES

Issue Price p	Amount Paid Up	Latest Renunc. Date	1978 High	1978 Low	Stock	Closing Price p	+ or −	Div. P. or Amount	Times Covered	Gross Yield	P.E. Ratio
75	F.P.	4/8	81	71	Cartiers Superfoods	78		b2.41	5.1	4.7	7.0
—	F.P.	[illegible]	10½	[illegible]	Cornay [illegible]	10½	[illegible]				
85	F.P.	[illegible]	94	83	Fleming Petr. Services	87	−1	4.65	8.0	8.1	6.1
116	F.P.	[illegible]	108	[illegible]	Jones (K.) (Jew'lrs) 10p	[illegible]		[illegible]	[illegible]	5.4	13.2

FIXED INTEREST STOCKS

Issue Price £	Amount Paid Up	Latest Renunc. Date	1978 High	1978 Low	Stock	Closing Price £	+ or −
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Audiotronic 12% Conv. Pref.	14p	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Birmingham Var. Rate 83-85	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Caffyns 10% Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Camden Var. Rate Red. 1983	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Do. 12¾% Red. 1986	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Central & Sheerwood 10% Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Crosby Spring Interiors 10% Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E.R.F. 10% Cum. Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	East Anglia Water 7% Red. Pref. 1983	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Kensington and Chelsea Var. Rate 1983	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Mooloya 12% Partly Conv. Uns. Ln. '85-'88	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Negretti and Zambra 9% Cnv. Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Northampton Var. Rate Red. 1983	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Pitman 10% Cum. Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Rayback 10% Conv. Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Rotork 9½% Cum. Pref.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Sefton Var. Rate Red. 1983	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Strathclyde Var. Rate Red. 1983	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Wandsworth Variable 1983	[illegible]	[illegible]

"RIGHTS" OFFERS

Issue Price p	Amount Paid Up	Latest Renunc. Date	1978 High	1978 Low	Stock	Closing Price p	+ or −
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Arrowson Bros.	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Bank of Montreal	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Blackwood Hodge	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Kunick Holdings	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Leven (Wm.)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Lex Service	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Norton (W. E.)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Property Partnerships	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Sutcliffe Speakman	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Tecalemit	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yorkshire Chemicals	[illegible]	[illegible]

Renunciation date usually last day for dealing free of stamp duty. [illegible]

FT-ACTUARIES SHARE INDICES

These indices are the joint compilation of the Financial Times, the Institute of Actuaries and the Faculty of Actuaries

	EQUITY GROUPS — GROUPS & SUB-SECTIONS (Figures in parentheses show number of stocks per section)	Wed., Aug. 30, 1978 Index No.	Day's Change %	Est. Earnings Yield % (Max.) Corp. Tax 52%	Gross Div. Yield % (ACT at 33%)	Est. P/E Ratio (Net) Corp. Tax 52%	Tues. Aug. 29 Index No.	Fri. Aug. 25 Index No.	Thurs. Aug. 24 Index No.	Wed. Aug. 23 Index No.	Year ago (approx.) Index No.
1	CAPITAL GOODS (170)	241.52	−0.6	15.94	5.10	8.62	242.93	245.63	244.49	247.74	206.19
2	Building Materials (27)	218.73	−1.0	15.93	5.13	8.80	220.94	222.97	221.86	225.45	181.46
3	Contracting, Construction (27)	395.12	−0.7	17.66	3.76	8.22	397.95	399.81	400.43	410.60	299.39
4	Electricals (14)	521.32	−0.5	13.77	3.53	10.09	524.16	532.93	527.63	532.77	432.74
5	Engineering Contractors (14)	356.10	−0.7	16.91	5.82	7.87	358.46	362.03	362.41	364.87	305.15
6	Mechanical Engineering (72)	193.56	−0.4	17.07	5.60	7.82	194.35	196.40	195.33	197.66	172.80
8	Metals and Metal Forming (16)	175.95	−0.3	16.00	8.03	8.51	176.46	178.15	178.38	180.55	162.66
11	CONSUMER GOODS (DURABLE) (52)	216.78	−1.2	16.10	4.87	8.64	219.47	223.17	223.50	225.52	196.63
12	Lt. Electronics, Radio TV (15)	265.46	−1.8	14.07	3.84	9.94	270.33	275.10	275.79	277.75	238.67
13	Household Goods (12)	181.18	−0.9	16.37	6.24	8.41	182.83	184.49	184.96	185.77	177.75
14	Motors and Distributors (25)	131.03	−0.4	19.36	6.25	7.17	131.49	133.76	133.70	135.40	118.51
21	CONSUMER GOODS (NON-DURABLE) (175)	217.13	−0.9	15.03	5.55	8.97	219.11	221.15	220.77	224.08	189.82
22	Breweries (14)	231.44	−0.8	15.00	6.06	9.17	233.23	234.70	233.65	236.19	190.23
23	Wines and Spirits (6)	278.16	−1.6	15.32	5.16	9.74	282.75	286.27	283.93	288.14	225.97
24	Entertainment, Catering (17)	265.97	−0.8	15.00	6.49	9.72	268.22	270.16	269.84	273.09	233.88
25	Food Manufacturing (21)	213.47	−0.8	17.80	5.18	7.42	215.15	217.24	216.63	219.97	189.44
26	Food Retailing (15)	223.32	−0.5	13.61	4.63	10.22	224.54	225.77	225.17	229.18	202.17
32	Newspapers, Publishing (13)	398.17	−0.2	10.20	3.17	13.99	398.86	402.12	398.98	408.85	309.32
33	Packaging and Paper (15)	147.87	−0.3	17.60	7.19	7.47	148.24	147.10	146.38	147.33	133.96
34	Stores (40)	205.49	−1.1	10.49	4.40	14.00	207.73	210.66	210.70	214.40	182.98
35	Textiles (25)	178.37	−1.1	18.42	7.77	7.08	180.33	182.73	181.68	184.60	167.22
36	Tobaccos (3)	256.11	−1.2	21.49	7.32	5.51	259.19	261.35	262.94	266.30	222.96
37	Toys and Games (6)	119.41	−0.4	18.98	5.35	6.16	119.95	121.23	121.68	122.26	108.67
41	OTHER GROUPS (98)	211.80	−0.4	15.29	5.52	8.54	212.63	215.39	214.21	217.33	198.83
42	Chemicals (19)	299.22	+0.3	16.75	5.99	8.12	298.19	303.38	300.29	306.45	278.95
43	Pharmaceutical Products (7)	277.02	−0.2	10.37	3.68	11.92	277.58	281.73	279.77	283.47	0.00
44	Office Equipment (6)	142.52	−2.7	16.81	5.33	7.04	146.46	143.65	142.49	143.35	121.65
45	Shipping (10)	414.54	−0.2	17.44	7.39	7.07	415.35	421.08	419.46	421.43	495.32
46	Miscellaneous (56)	225.37	−0.8	16.25	5.93	8.17	227.18	230.35	230.47	233.47	197.58
49	INDUSTRIAL GROUP (495)	229.11	−0.7	15.40	5.38	8.75	230.77	233.35	232.62	235.89	203.53
51	Oils (5)	506.36	−0.4	14.56	3.90	7.45	508.65	517.93	516.09	523.72	511.42
59	500 SHARE INDEX	252.40	−0.7	15.28	5.17	8.53	254.13	257.23	256.41	260.04	228.70
61	FINANCIAL GROUP (100)	173.11	−0.8	—	5.57	—	174.57	176.35	175.94	178.13	150.83
62	Banks (6)	193.13	—	24.21	6.06	6.20	193.13	194.43	191.79	194.09	158.21
63	Discount Houses (10)	217.82	−0.1	—	7.94	—	217.96	218.04	217.62	216.46	192.92
64	Hire Purchase (5)	162.06	−1.2	15.03	5.08	8.78	164.06	167.88	166.81	168.92	146.03
65	Insurance (Life) (10)	145.77	−1.4	—	6.25	—	147.85	150.30	151.76	154.63	118.60
66	Insurance (Composite) (7)	132.15	−1.5	—	6.53	—	134.22	136.21	136.69	138.34	127.77
67	Insurance Brokers (10)	354.48	−0.1	13.26	4.48	10.79	354.76	358.68	355.97	361.55	354.99
68	Merchant Banks (14)	85.59	−0.5	—	5.72	—	86.02	86.36	86.16	86.45	70.75
69	Property (31)	255.75	−1.2	3.22	2.94	54.44	[illegible]	[illegible]	260.17	263.13	204.66
70	Miscellaneous (7)	113.31	−0.8	22.30	7.37	5.81	114.21	114.97	116.12	117.64	95.92
71	Investment Trusts (50)	232.55	−1.0	2.99	4.44	33.41	234.79	237.71	239.72	240.42	168.67
81	Mining Finance (4)	107.86	—	16.36	6.41	7.44	107.82	107.58	108.32	107.91	96.07
91	Overseas Traders (19)	332.91	+0.1	16.37	6.74	7.65	332.59	335.42	331.52	333.88	281.93
99	ALL-SHARE INDEX (673)	232.07	−0.7	—	5.26	—	233.68	[illegible]	235.79	238.82	206.54

FIXED INTEREST PRICE INDICES

	British Government	Wed., Aug. 30	Day's change %	xd adj. To-day	xd adj. 1978 to date
1	Under 5 years	104.53	−0.29	—	6.70
2	5-15 years	114.87	−0.46	—	7.04
3	Over 15 years	120.68	−0.36	—	9.21
4	Irredeemables	126.96	−0.34	—	8.91
5	All stocks	112.76	−0.35	—	7.72

FIXED INTEREST YIELDS — Br. Govt. Av. Gross Red.

			Wed., Aug. 30	Tues. Aug. 29	Year ago (approx.)
1	Low Coupons	5 years	8.84	8.74	6.45
2		15 years	10.98	10.90	10.86
3		25 years	11.65	11.60	11.76
4	Medium Coupons	5 years	11.68	11.52	9.86
5		15 years	12.14	12.10	11.82
6		25 years	12.14	12.11	12.36
7	High Coupons	5 years	11.65	11.51	10.12
8		15 years	12.64	12.58	12.98
9		25 years	12.84	12.79	13.09
10	Irredeemables		11.60	11.58	11.62

		Wed. Aug. 30 Index No.	Wed. Aug. 30 Yield %	Tues. Aug. 29	Friday Aug. 25	Thur. Aug. 24	Wed. Aug. 23	Tues. Aug. 22	Mon. Aug. 21	Friday Aug. 18	Year ago (approx.)
15	20-yr. Red. Deb & Loans (15)	57.81	12.64	57.82	57.82	57.82	57.62	57.82	57.78	57.79	54.43
16	Investment Trust Prefs. (15)	51.57	13.60	51.52	51.52	51.52	51.52	51.52	51.64	51.73	51.11
17	Coml. and Indl. Prefs. (20)	70.75	12.93	70.82	70.82	70.82	70.87	70.82	70.14	70.15	69.91

† Redemption yield. Highs and lows record, base dates and values and constituent changes are published in Saturday issues. A list of the constituents is available from the Publishers, the Financial Times, Bracken House, Cannon Street, London, EC4P 4BY, price 13p, by post 22p. ● Corrected.

AUTHORISED UNIT TRUSTS

E. F. Winchester Fund Mngt. Ltd.
Old Jewry, EC2 01-606 2167

Great Winchester	18.8	20.3	...	4.73
Gt.Winch'er O'seas	20.8	22.7	...	3.42

Emson & Dudley Tst. Mngmnt. Ltd.
20, Arlington St., S.W.1. 01-499 7551

Emson Dudley Tst.	69.9	75.2	...	3.80

Equitas Secs. Ltd. (a) (g)
41 Bishopsgate, EC2 01-588 2851

Progressive	70.7	74.8	−0.8	3.82

Equity & Law Un. Tr. M.♥ (a)(b)(c)(z)
Amersham Rd., High Wycombe 0494 33377

Equity & Law	71.3	75.0	−0.6	3.89

Courtwood House, Silver Street, Head. Sheffield, S1 3RD. Tel 0742 79842

Commodity & Gen.	74.8	80.5	−0.3	4.85
Do. Accum.	86.3	92.8	−0.3	4.85
Growth	38.6	41.3	−0.3	2.74
Do. Accum.	41.4	44.3	−0.3	2.74
Capital	29.8	31.9	−0.3	2.92
Do. Accum.	32.5	34.8	−0.3	2.92
Income	55.2	59.0xd	−0.4	6.13
Do. Accum.	64.4	68.9	−0.4	6.13
International	48.6	52.6	−0.4	2.14
Do. Accum.	51.8	56.0	−0.4	2.14
High Yield	65.9	70.2	−0.2	7.70
Do. Accum.	69.6	74.4	−0.2	7.70
Equity Exempt*	108.1	114.1	+2.1	5.49
Do. Accum.*	108.1	114.1	+2.1	5.49

*Prices at July 31. Next dealing August 31.

CLIVE INVESTMENTS LIMITED
1 Royal Exchange Ave., London EC3V 3LU. Tel.: 01-283 1101.
Index Guide as at August 30, 1978 (Base 100 at 14.1.77)
Clive Fixed Interest Capital 129.40
Clive Fixed Interest Income 114.12

CORAL INDEX: Close 502-507

INSURANCE BASE RATES
†Property Growth 10¼%
†Vanbrugh Guaranteed 9%
†Address shown under Insurance and Property Bond Table.

INSURANCE AND PROPERTY BONDS

OFFSHORE AND OVERSEAS FUNDS

J.E.T. Managers (Jersey) Ltd.
PO Box 194, Royal Tst. Hse., Jersey 0534 27441

Jersey Extrnl. Tst.	186.0	197.0	...	—

As at July 31. Next sub. day August 31.

Jardine Fleming & Co. Ltd.
46th Floor, Connaught Centre, Hong Kong

Jardine Estn. Tst.	HK$312.95	...	2.30
Jardine J'pn Fd.*	HK$400.75	...	0.80
Jardine S.E.A.	$US19.82	...	1.70
Jardine Flem. Int.	HK$11.40	...	—
Intl. Pac. Secs (Inc.)	HK$14.56	...	—
Do. (Accum.)	HK14.70	...	—

NAV Aug. 15 *Equivalent $US84.01. Next sub. August 31.

Warburg Invest. Mngt. Jrsy. Ltd.
1, Charing Cross, St. Helier, Jsy. CI 0534 73741

CMF Ltd. July 27	$US[illegible]	13.10	...	—
CMT Ltd. July 27	£13.20	13.55	...	—
Metals Tst. Aug. 17	£12.22	12.52	...	—
TMT August 17	$US11.30	11.58	...	—
TMT Ltd. Aug. 17	£11.40	11.69	...	—

World Wide Growth Management⊕
10a, Boulevard Royal, Luxembourg

Worldwide Gth Fd	$US16.69	−0.07	—

NOTES

Prices do not include $ premium, except where indicated $, and are in pence unless otherwise indicated. Yields % (shown in last column) allow for all buying expenses. a Offered prices include all expenses. b To-day's prices. c Yield based on offer price. d Estimated. g To-day's opening price. h Distribution free of U.K. taxes. p Periodic premium insurance plans. s Single premium insurance. x Offered price includes all expenses except agent's commission. y Offered price includes all expenses if bought through managers. z Previous day's price. ♥ Net of tax on realised capital gains unless indicated by ⊕. § Guernsey gross. # Suspended. ◆ Yield before Jersey tax. † Ex-subdivision.

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Financial

FOREIGN BONDS & RAILS

1978 High	Low	Stock	Price £	+ or —	Div. % Gross	Red. Yield
[illegible]	[illegible]	Antofagasta Rly.	24	......	—	—
[illegible]	[illegible]	Do 5pc Pref.	40	......	—	—
[illegible]	[illegible]	[illegible]	98	......	—	f3.10
[illegible]	[illegible]	German Yg. 4½pc	411	......	4½	—
[illegible]	[illegible]	[illegible]	54	......	3½	f6 60
[illegible]	[illegible]	[illegible]	51	......	6	f5.88
[illegible]	[illegible]	[illegible]	43	......	4	f4 65

AMERICANS

CANADIANS

BANKS AND HIRE PURCHASE

1978 High	Low	Stock	Price	+ or —	Div. Net	Cvr	Y'ld Gr's	P/E
260	185	Guinness Peat	256	......	†10.15	—	5.9	—
217	155	Hambros	188	—4	9.76	—	7.7	—
100	81	Hill Samuel	99	......	4 97	—	7.5	—
600	325	Do Warrants	425	......	—	—	—	—
360	203	Hong Shng $2.50	330	+3	hQ59c	—	2.1	—
69	52	Jessel Toynbee	62	......	h3.32	—	8.0	—
215	160	Joseph (Leo) £1	200	......	8.74	—	6.5	—
52	37	Keyser Ullmann	47	—2	0.67	—	2.1	—
74	56	King & Shax 20p	62	......	3.44	—	8 3	—
114	90	Kleinwort B.L.	106	......	4.18	—	5.9	—
297	242	Lloyds £1	264	......	†9 23	4.8	5.2	6.0

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O.F.S.

FINANCE

DIAMOND AND PLATINUM

MINES—Continued

CENTRAL AFRICAN

1978 High	1978 Low	Stock	Price	+ or —	Div. Net	Cvr	Y'ld Gr's
210	155	Falcon Rh 50c	177	+2	Q50c	1.3	24.1
24	15	Rhod'n Corp. 16⅔p.	19	......	0.57	7.1	4.5
80	52	Roan Cons. K4	65	......	—	—	—
186	122	Tanganyika 50p	170	......	Q10.0	1.2	5.9
90	78	Do. Pref. 80p	87		Q9%	16.3	8.3
41	32	Wankie Col. Rh 1	37½	−½	†Q7½c	1.4	17.1
17½	10	Zam Cpr SBD0.24	14½	....	—	—	—

AUSTRALIAN

TINS

COPPER

MISCELLANEOUS

High	Low	Stock	Price	+ or —	Div. Net	Cvr	Y'ld Gr's
61	35	Barymin	52	−1	—	—	—
17	9	Burma Mines 17½p	13	......	—	—	—
300	215	Cons. Murch. 10c	235	−5	‡Q30c	2.6	‡
465	245	Northgate C$1	355	−25	—	—	—
248	164	R.T.Z.	241	+1	9.5	2.8	5.9
90	30	Sabina Inds. C$1	55	−3	—	—	—
£12	750	Tara Explrn. $1	837	−25	—	—	—
73	43	Tehidy Minerals 10p	68	......	♦1.35	♦	3.0
185	120	Yukon Cons. C$1	155	−3	Q7c	2.9	2.2

NOTES

Unless otherwise indicated, prices and net dividends are in pence and denominations are 25p. Estimated price/earnings ratios and covers are based on latest annual reports and accounts and, where possible, are updated on half-yearly figures. P/Es are calculated on the basis of net distribution; bracketed figures indicate 10 per cent. or more difference if calculated on "nil" distribution. Covers are based on "maximum" distribution. Yields are based on middle prices, are gross, adjusted to ACT of 34 per cent. and allow for value of declared distributions and rights. Securities with denominations other than sterling are quoted inclusive of the investment dollar premium.

- ▲ Sterling denominated securities which include investment dollar premium.
- ● "Tap" Stock.
- * Highs and Lows marked thus have been adjusted to allow for rights issues for cash.
- † Interim since increased or resumed.
- ‡ Interim since reduced, passed or deferred.
- ‡‡ Tax-free to non-residents on application.
- ♦ Figures or report awaited.
- †† Unlisted security.
- ø Price at time of suspension.
- ¶ Indicated dividend after pending scrip and/or rights issue; cover relates to previous dividends or forecasts.
- ♦ Merger bid or reorganisation in progress.
- ♣ Not comparable.
- ♦ Same interim: reduced final and/or reduced earnings indicated.
- § Forecast dividend: cover on earnings updated by latest interim statement.
- ‡ Cover allows for conversion of shares not now ranking for dividends or ranking only for restricted dividend.
- ★ Cover does not allow for shares which may also rank for dividend at a future date. No P/E ratio usually provided.
- ♥ Excluding a final dividend declaration.
- ♦ Regional price.
- ‖ No par value.

a Tax free. b Figures based on prospectus or other official estimate. c Cents. d Dividend rate paid or payable on part of capital: cover based on dividend on full capital. e Redemption yield. f Flat yield. g Assumed dividend and yield. h Assumed dividend and yield after scrip issue. j Payment from capital sources. k Kenya. m Interim higher than previous total. n Rights issue pending. q Earnings based on preliminary figures. s Dividend and yield exclude a special payment. t Indicated dividend: cover relates to previous dividend, P/E ratio based on latest annual earnings. u Forecast dividend: cover based on previous year's earnings. v Tax free up to 30p in the £. w Yield allows for currency clause. y Dividend and yield based on merger terms. z Dividend and yield include a special payment: Cover does not apply to special payment. A Net dividend and yield. B Preference dividend passed or deferred. C Canadian. E Issue price. F Dividend and yield based on prospectus or other official estimates for 1979-80. G Assumed dividend and yield after pending scrip and/or rights issue. H Dividend and yield based on prospectus or other official estimates for 1978-79. K Figures based on prospectus or other official estimates for 1978. M Dividend and yield based on prospectus or other official estimates for 1978. N Dividend and yield based on prospectus or other official estimates for 1979. P Figures based on prospectus or other official estimates for 1978-79. Q Gross. T Figures assumed. Z Dividend total to date. ¶¶ Yield based on assumption Treasury Bill Rate stays unchanged until maturity of stock.

Abbreviations: ✕d ex dividend; ✕c ex scrip issue; ✕r ex rights; ✕a ex all; ✕d ex capital distribution.

"Recent Issues" and "Rights" Page 40

REGIONAL MARKETS

The following is a selection of London quotations of shares previously listed only in regional markets. Prices of Irish issues, most of which are not officially listed in London, are as quoted on the Irish exchange.

Stock	Price	+ or —
Albany Inv. 20p	25½	.....
Ash Spinning	45	.....
Bertam	20	.....
Bdg'wtr Est. 50p	315	.....
Clover Croft	26	.....
Craig & Rose £1	520	.....
Dyson (R. A.) A	38	.....
Ellis & McHdy	63	.....
Evered	22	.....
Fife Forge	52	.....
Finlay Pkg. 5p	21	.....
Graig Ship £1	120	.....
Higsons Brew	77	.....
I.O.M. Stm. £1	145	−10
Holt (Jos.) 25p	260	.....
N'thn. Goldsmith	68	.....
Pearce (C. H.)	185	.....
Peel Mills	20	.....
Sheffield Brick	45	−1
Sheff. Refrshmt.	65	.....
Sindall (Wm.)	105	.....

IRISH

Stock	Price	+ or —
Conv. 9% '80/82	£92¼	−¼
Alliance Gas	62	.....
Arnott	360	.....
Carroll (P. J.)	105	.....
Clondalkin	95	.....
Concrete Prods.	135	.....
Heiton (Hldgs.)	48	.....
Ins. Corp.	160	.....
Irish Ropes	130	.....
Jacob	63	.....
Sunbeam	34	.....
T.M.G.	177xd	.....
Unidare	110	.....

OPTIONS
3-month Call Rates

Industrials

Stock	Rate
A. Brew	6½
A.P. Cement	18
B.S.R.	9
Babcock	11
Barclays Bank	25
Beecham	35
Boots Drug	15
Bowaters	16
B.A.T.	24
British Oxygen	6
Brown (J.)	20
Burton 'A'	12
Cadburys	5
Courtaulds	10
Debenhams	8
Distillers	15
Dunlop	7
Eagle Star	11
E.M.I.	14
Gen. Accident	17
Gen. Electric	18
Glaxo	40
Grand Met.	9
G.U.S. 'A'	20
Guardian	18
G.K.N.	25
Hawker Sidd.	20
House of Fraser	12
I.C.I.	20
"Imps"	6
I.C.L.	20
Inveresk	8
KCA	3
Ladbroke	17
Legal & Gen.	14
Lex Service	7
Lloyds Bank	22
"Lots"	4
London Brick	5
Lonrho	5
Lucas Inds.	25
Lyons (J.)	10
"Mams"	7
Mrks. & Spncr.	10
Midland Bank	25
N.E.I.	12
Nat. West. Bank	22
Do. Warrants	10
P & O Dfd.	8
Plessey	8
R.H.M.	5
Rank Org. 'A'	18
Reed Intnl.	12
Spillers	3
Tesco	4
Thorn	22
Trust Houses	15
Tube Invest.	30
Unilever	35
Utd. Drapery	7½
Vickers	15
Woolworths	5

Property

Stock	Rate
Brit. Land	3¼
Cap. Counties	4½
E.P.	5
Intereuropean	4
Land Secs.	16
MEPC	12
Peachey	8
Samuel Props.	9
Town & City	1¼

Oils

Stock	Rate
Brit. Petroleum	45
Burmah Oil	5
Charterhall	3
Shell	28
Ultramar	20

Mines

Stock	Rate
Charter Cons.	12
Cons. Gold	14
Rio T. Zinc	16

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FINANCIAL TIMES
Thursday August 31 1978

Waldheim proposes 7,500 UN troops for Namibia

BY OUR OWN CORRESPONDENT — UNITED NATIONS, August 30.

UNITED NATIONS Security Council members will meet behind closed doors tomorrow to consider how to proceed with plans to mount massive UN military and civilian operations designed to help bring Namibia —South West Africa—to independence from South Africa.

In a written report to the council today, Dr. Kurt Waldheim, Secretary General, proposed the dispatch to Namibia of 7,500 troops and a civilian team of about 1,200 officials and extra staff, as well as 360 civilian police.

Operation

Their task would be to maintain law and order and arrange, supervise and control elections to a constituent assembly, which, in turn, would formulate and approve a constitution leading to Namibian nationhood.

It would be by far the largest operation by the UN since it became involved in the Congo (now Zaire) in the 1960s. But it would also be very different from the Congo operation, which brought the UN to the brink of bankruptcy. Both South Africa and the South-West Africa People's Organisation (SWAPO) want the UN's help, and the UN troops' function would be largely to monitor a cease-fire between the South Africans and the guerrillas, and use force only in self-defence.

The Namibia settlement plan drafted by Britain, the U.S., France, West Germany, and Canada, the Western members of the Security Council — on which Dr. Waldheim's recommendations were based — called for the withdrawal of all but 1,500 South African troops from the territory. This residue would be confined to one or two bases in the northern part of Namibia —which is larger than France and Italy together.

The UN troops would monitor the withdrawal and restriction of the South African forces, prevent infiltration and maintain border surveillance, and monitor the demobilisation of citizen forces, commandos and ethnic forces and the dismantling of the command structure.

Dr. Waldheim said there were too many unknown factors to permit an accurate assessment of the cost of the operation, to be known as the UN Transition Assistance Group, UNTAG. But that it could be as high as $300m (£154m). About $33m (£16m) would be needed to finance the return of refugees and exiles to the territory, he said.

Prisoners

Under the proposals, the South African authorities must scrap existing discriminatory laws, release political prisoners and enable those exiled to return to participate in the electoral process.

Dr. Waldheim said elections could be held seven months after the Security Council gave the word to get UNTAG under way. He also said that any idea of independence by the end of this year now was out of the question. This was the South Africans' target and also specifically called for in the Western plan. The Secretary-General said delay in reaching agreement made it impossible to meet the December 31 deadline.

Britain agrees to join airbus project

BY LYNTON McLAIN

BRITAIN HAS agreed in principle to join the European Aibus consortium with France and West Germany. But Mr. Eric Varley, Industry Secretary, is understood to have told Mr. Joel le Theule, the French Transport Minister, last night that he is not prepared to force British Airways to buy the new A310 Airbus as a condition of entry to the project.

The formal British Government decision to join the Airbus programme is still expected within a few days. Mr. Varley is hoping that agreement with the French over continued freedom for British Airways over its aircraft buying policy can be reached before the end of the Farnborough air show on September 10.

M. le Theule flies to Bonn today to report to Herr Martin Gruner, the West German state secretary in the Ministry of Economic Affairs on the outcome of the London talks.

British Airways wants to buy the Boeing 757 airliner for its needs into the 1980s instead of the Airbus. The airline hopes to make a formal decision to buy the 757 early next year after Rolls-Royce has been given the expected go-ahead for the Dash 535 version of the RB 211 jet engine which would power the Boeing.

Free choice

The engine is backed by the National Enterprise Board, the Rolls-Royce holding organisation, which has urged British Aerospace and the Government to back the U.S. aircraft rather than the Airbus.

A Government announcement about joining the Airbus programme is likely to include the sanctioning of development funds for the Dash 535, so that British industry can benefit from the expected British Airway's Boeing 757 order.

Mr. Varley, in his talks last night with the French Transport Minister, is understood to have impressed on M. Le Theule the right of British Airways to choose its aircraft for commercial reasons. The airline was granted permission by the Government in July to buy 19 Boeing 737 airliners to replace ageing Tridents in a contract worth £120m.

The airline was also given permission to buy six British Aerospace One-Eleven jets for £30m in a move to placate Britain's aircraft workers.

The French, British and German ministers are understood to have agreed already on the likely British share of the Airbus programme, provided the other difficulties can be resolved. Britain is likely to contribute up to £100m, equivalent to 20 per cent of the total A310 development programme. It may also pay a token sum towards the costs of the earlier Franco-German development of the original A300 Airbus.

Britain's Hawker Siddeley, now part of British Aerospace, designed and manufactured the wings for the A300. It made a substantial profit from the venture without incurring any development costs for the whole aircraft, much to the annoyance of the French.

FT Conference, Page 5

THE LEX COLUMN

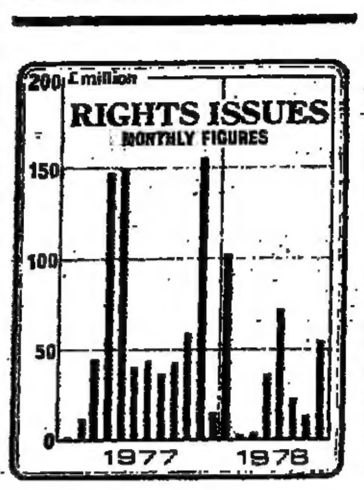
The rush to raise equity in Paris

Rights issues have crossed *the English Channel in earnest.* Within one holiday week two French companies, first Compagnie Francaise des Petroles, and now Saint Gobain, have launched rights offerings to raise a total of Frs. 1.2bn (£142m). This is a larger sum than quoted French companies have raised from their shareholders in *any* year since 1973. It marks the re-emergence of the Bourse as something more than a purveyor of public debt to French investors.

The market is now full of speculation that other French companies—Aquitaine, Michelin, Lafarge to name a few—will soon be following suit. This talk has left investors a little nervous and prices yesterday continued a slide which has trimmed the Paris Bourse index by 3.7 per cent from its 1978 high on August 3.

In the wake of the March election it was Compagnie Generale D'Electricite which led the way with a rights issue raising Frs 300m. The election had removed the threat of nationalisation which had made such an issue impossible over the preceding two years. The French Government's subsequent drive for a free market economy has provided further encouragement. Specifically, the government has allowed French citizens to deduct Frs 4,900 of share purchases each year from taxable income. It has also increased the corporation tax relief on dividends paid on newly issued shares. French bankers are now talking about the need for an orderly queue to keep the flow of rights issues under control.

Index fell 2.8 to 503.0



BTR's triple

Here in Britain BTR has assured a place for itself in recent rights issue history by announcing its third rights issue in three years to raise £24.1m. And instead of falling, the share price actually put on 7p to close at its year's high of 340p which on the face of it looks a rather strange reaction. But then BTR has at least demonstrated in the past that it can use the money profitably and the 30 per cent increase in dividend will put the shares on a yield of just under 5 per cent.

Given the group's heavy spending on acquisitions in North America ($55m in six months) plus the purchase of Andre Silentbloc and Allied Polymer here in the UK, the call for extra capital is not totally unexpected. Since the end of 1977 short-term borrowings have risen from £8.2m to £25.9m and loan capital has more than doubled to £48.5m. Compared with shareholders' funds of £119m this level of gearing does not look unduly demanding but BTR is keen to continue expanding at a fast clip and wants to keep its balance sheet flexible enough to accommodate future acquisitions.

Since 1970 BTR's pre-tax profits have risen from under £3.0m to £29.0m and with a 34 per cent rise in profits under its belt at the halfway stage, it should be heading for £40m. plus in the current year. BTR reckons that roughly half of its growth is coming from its old established businesses and the rest from acquisitions. So far it has proved far more successful than many other companies in combining rapid organic growth with an aggressive acquisition policy.

BOC International

The third quarter figures from BOC International confirm that underlying profits are going nowhere in particular—trading profits outside the U.S. have eased slightly—but the statement is notable for its inclusion of a group balance sheet consolidating Airco for the first time. With total debt now topping £500m the group's gearing has inevitably risen sharply: borrowings represented 25 per cent of capital employed last September, and were up to 46 per cent by June following the Airco purchase. As expected, BOC has added a little sugar to this consolidation by taking in Airco's fixed assets at replacement cost rather than their last U.S. book value which looks to have been of the order of £140m lower. This has been enough to prevent the gearing ratio from appearing as 52 per cent or so, but at the same time the group's p and l account is being burdened by a stiff depreciation charge.

On the trading front, BOC is hoping for an improvement in the UK but it is questionable whether this will show up in the final quarter. Apart from South Africa, which is picking up, the picture elsewhere is unexciting and Airco, despite a buoyant U.S. economy, is being held back by losses on its alloys business.

Cement-Roadstone

Cement-Roadstone, Ireland's largest industrial company, seems set for another record year. Yesterday's interim figures reveal that pre-tax profits are up 35 per cent at £8.9m, despite a decline in the contribution from the dominant cement division. Forecasts for the full year centre around £18m at the pre-tax level, compared with £14.8m last time. During the past seven years since the group was formed Cement-Roadstone has reported an uninterrupted growth trend in profits, turnover, earnings and dividends. In 1970 earnings per share amounted to 0.77p; last year the figure was 10.46p. On only two occasions during the period has the dividend increase been less than 20 per cent.

Dominating the country's building materials industry (with a monopoly in cement) Cement-Roadstone has been one of the prime beneficiaries of Ireland's recent economic boom. In the current year, for example, the volume of cement sales is expected to rise by about 17 per cent, while sales of the group's other building and construction materials could be a fifth better. Difficulties in obtaining a cement price increase since January 1977 have prevented a good part of this boom showing through in profits so far this year. Still, the group seems optimistic that the case for improving its return on capital will shortly find favour with the Dublin authorities. At 104p the shares stand at a prospective p/e of about 8½ on a 10 per cent tax charge.

Burmah sells Australian gas and oil interests

BY KEVIN DONE IN LONDON AND JAMES FORTH IN SYDNEY

BURMAH OIL is selling all its remaining oil and as exploration and production interests in Australia in a deal worth about £20.8m

The sale takes in its shareholdings in three quoted Australian companies engaged in oil and gas exploration and production in the Cooper Basin, South Australia. Burmah's interests at being bought out by a group headed by Bond Corporation Holdings and Endeavour Resources.

Burmah stressed yesterday that the sale was not linked to its programme of selling off major assets, which ended in 1976.

In that year, Burmah had to realise assets worth £553.4m, which included the sale of its interests in the North Sea Ninian Field and 65 per cent of its share in the Thistle Field.

Investments

A year earlier, its disposals included the sale of £179m worth of shares in British Petroleum.

The disposals were necessary to help Burmah cope with the financial crisis of 1975.

By contrast, the sale of the Cooper Basin interests would allow funds to be released for investment in other business areas, the company said yesterday.

It is understood that Burmah has been open to an offer for some months, facing the prospect of investments in the Cooper Basin of £5m to £6m over the next three years.

Burmah is selling its 37.5 per cent interest in Santos, its 30.9 per cent interest in Basin Oil NL, and its 67 per cent interest in Reef Oil NL. These interests were held by Burmah Australia Exploration.

The price of the deal is A$35m (about £20.8m), which will be paid over the period to the end of November next year.

Last year the profit attributable to the Burmah Group from this investment was A$1.3m.

The three companies together control 46.64 per cent of the Cooper Basin joint venture, which involves 11 parties including a South Australian Government authority.

The consortium that has bought out the Burmah interests is made up of Bond Corporation 50 per cent, Endeavour Resources 30 per cent, a Bond family company 10 per cent, Amalgamated Industries 5 per cent and Leighton Mining 5 per cent.

The Bond Corporation is headed by Mr. Allan Bond, a West Australian businessman and yachting personality. He became known internationally for his attempts to win the Americas Cup.

Resources

The deal marks a major move back into natural resoruces for the Bond Group, which earlier this year acquired tin mining interests in New South Wales and Western Australia, and oil interests in Texas by buying 24.2 per cent of Endeavour Resources.

The Cooper Basin supplies natural gas to Sydney and Adelaide. It has proven reserves of about 3 trillion (million million) cubic feet of gas and about 314m barrels of oil and natural gas liquids.

Burmah sold its other Australian exploration interests in the North West Shelf natural gas project in 1975.

Euston Square office let to U.S. group

BY JOHN BRENNAN, PROPERTY CORRESPONDENT

THE U.S. engineering group, Fluor, has rented the 237,000 sq ft of available space in British Rail's £32m Euston Square development in the largest central London office letting for many years.

Fluor (Great Britain), which formally signed the deal last week, plans to move its 1,300 London staff into Euston Square next spring.

The group, advised by White, Druce and Brown, is believed to have agreed to pay just under British Rail's asking rent of £13.50 a sq ft. It is likely to be paying £3m a year, with a slight rental concession until its move to the building next year.

British Rail, which was represented by Edward Erdman and Company in the letting negotiations, plans to move its own headquarters staff into the rest of the 307,000 sq ft development.

The development was the largest single area of empty modern office space in London. It was started after 150 years of negotiations and abortive plans for commercial buildings on the Euston Station site.

The scheme, begun in 1974, was put together by Peachey Property Corporation under the direction of the late Sir Eric Miller

Peachey brought in Norwich Union to finance three of the four office blocks in the development, and Pension Fund Securities, ICI's pension fund, to finance the rest of the £32m project. The funds leased-back the offices to British Rail's Property Board for 134 years.

In 1976, Peachey's interest in the scheme was taken over by its financing partners.

Scotland considered for new Texas plant

BY JOHN LLOYD

TEXAS Instruments, the U.S. multinational semiconductor company, plans to set up a major plant in Europe. Central Scotland and the Irish Republic are the most favoured areas.

The company would not confirm a choice of site yesterday, nor would it say what the plant would produce. However, Mr. Robb Wilmot, managing director of Texas Instrument's UK subsidiary, said that there would be a "significant product announcement" next week.

The plant would employ around 2,500 people and would probably manufacture a range of semiconductor products, including instrumentation equipment. There has been some speculation that the company will expand its microprocessor capability in Europe.

The company has examined six possible 25-acre sites in the Strathclyde region in the last two months. Inquiries have been made through the Scottish Council (Development and Industry) and are the largest it has handled for several years.

The sites are in the Kyle, Carrick and Motherwell districts and at East Kilbride, Cumbernauld and Irvine New Towns.

Mr. Dale Cunningham, vice-president in charge of facilities at Texas's Dallas headquarters, said yesterday that the company had examined sites in Ireland and Scotland, and that any plant set up by the company would be a major one.

Election of a Scottish site would mean that Texas could attract several grants. Strathclyde, as a special development area, qualifies for an automatic 22½ per cent Government grant for new development.

The Scottish Office is also promoting a range of selected financial assistance under Section 7 of the Industry Act, varying from low interest loans to outright grants.

Study of computer staff needs, Page 10

Express decision today on new paper

By John Lloyd

PLANS FOR a new national daily paper, to be published by Express Newspapers from its Manchester plant, were being discussed by the Express Board last night. An announcement is expected to be made today.

Mr. Derek Jameson, editor of the Daily Express, said yesterday that the proposed paper would be a "Daily Mirror-Sun hybrid," and that it would compete with the Daily Express.

It would aim for a circulation of around 2m, and Mr. Jameson said he would keep "a fatherly eye" on its development.

The editor is likely to be Mr. Peter Grimsditch, former deputy editor of Reveille magazine. He had been tipped for the job of editor of a new London evening newspaper which the Express group is also investigating.

More than three quarters of the 170 Daily Express Manchester editorial staff will be transferred to the new paper, which may be called the Daily Star.

Mr. Jameson said that it would attract northern sales by being able to include late news and late sports results. However, it was intended that it would be a fully national newspaper, "available in Cornwall and the north of Scotland the next morning."

A London editorial office independent of the Express, would handle national political and other news.

Today's announcement is likely to follow talks between Mr. Jocelyn Stevens, Express Newspapers' managing director and deputy chairman, and representatives of the Express unions in Manchester.

The new paper will face keen competition from the Sun, which sells more than 4m copies daily and has well-advanced plans to print a Scottish edition in Glasgow.

The Glasgow-produced Sun could contain much of the same late sports and other news as the new Express newspaper.

Continued from Page 1

U.S. prime rates

but argued that "We have run out of present options."

The Administration is known to be looking at the taxation approach to a prices and incomes policy but the difficulties of devising a workable system are thought to rule it out as an early option. Government spokesmen have indicated that a second stage of its anti-inflation policy is being prepared and that wage and price controls are still being ruled out.

Michael Blanden writes: The rise in U.S. bank lending rates gave modest respite to the dollar after the heavy pressure the previous day.

In overnight trading in Tokyo, the dollar had fallen sharply in line with the slump in Europe on Tuesday after the news of the U.S. July trade deficit of nearly $3bn. At one point in Tokyo, the U.S. currency dropped by nearly Y6, one of the biggest falls in a single day's trading.

It opened slightly weaker in European markets yesterday, picked up in London and New York on the prime-rate news, but lost some of the improvement later. The dollar's weighted depreciation, calculated at noon in New York by Morgan Guaranty, widened from 8.9 per cent to 9.2 per cent.

At its best, the dollar touched SwFr 1.6460, compared with SwFr 1.6350 the previous day. It remained below the DM2 level at DM 1.9890 compared with DM 1.9910.

The Japanese yen ended at Y189.10 to the dollar against Y189.45.

The pound reached $1.9510 at its best, but closed at $1.9410 for a fall of 45 points on the day. Its trade-weighted index was unchanged at 62.4.

Continued from Page 1

U.S. bank and BCCI

blue ink. The credit report contained a statement that Bank of America should have an officer present at BCCI at all times.

Mr. Kraus was also informed that the credit report said that BCCI had made a "substandard loan" to its subsidiary Kuwait International Finance Company

In previous court proceedings, KIFCO admitted lending Faisal Saud Al-Fulaij, a Kuwaiti businessman, $5m, $3.5m of which was used to pay for financial general stock purchased on his behalf.

Attached as an exhibit to Mr. Kraus' affadavit is a copy of a memoradum dated May 10, 1976, from Mr. Alvin Rice, recently-retired vice-chairman of Bank of America, to Mr. Scudder Mersman, senior vice-president, in response to concern about BCCI.

After examining BCCI's banking practices, Mr. Rice concludes that BCCI 'needs much tighter administrative control in the very broad sense."

Bank of America said today it would shortly be filing its own motion with the court which would respond to the statements made in the affidavit.

Weather

UK TODAY

RATHER COOL, some rain in the north, but temperatures near normal in central and southern areas.

London, S.E. and Cent. S. England, E. Anglia, Channel Islands
Dry, sunny spells. Max. 19C (66F).

Midlands, E. England, S. Wales
Sunny intervals, some rain. Max. 19C (66F).

S.W. England
Dry, sunny intervals. Max. 18C (64F).

N. England, N. Wales, Lakes
Cloudy, some rain or drizzle. Max. 16C (61F).

Isle of Man, S.W. Scotland, Glasgow, Argyll, N. Ireland
Rain or drizzle, becoming dry with sunny intervals. Max. 17C (63F).

Borders, Edinburgh, Dundee, Aberdeen, Highlands, Moray Firth
Some rain, sunny periods later. Max. 16C (61F).

N.E. Scotland, Orkney, Shetland
Some rain, sunny intervals. Max. 13C (55F).

N.W. Scotland
Some rain becoming brighter. Max. 14C (57F).

Outlook: Dry with sunny periods. Showers in the east.

BUSINESS CENTRES

		Y'day midday °C	°F			Y'day midday °C	°F
Amsrdm.	F	15	59	Madrid	S	31	88
Athens	S	29	84	Manchstr.	C	14	57
Bahrain	S	35	95	Melbourne	C	17	63
Barcelona	S	27	81	Mexico C.	S	21	70
Beirut	S	27	81	Milan	F	25	77
Belfast	C	14	57	Montreal	C	19	66
Belgrade	C	23	73	Moscow	C	16	61
Berlin	C	24	75	Munich	F	15	59
Brmghm.	C	14	57	Newcastle	C	11	52
Bristol	F	17	63	New York	C	25	77
Brussels	F	16	61	Oslo	F	16	61
Budapest	C	21	70	Paris	C	18	64
B. Aires	S	10	50	Perth	S	18	64
Cairo	S	32	90	Prague	C	14	57
Cardiff	F	17	63	Reykjavik	C	9	48
Chicago	S	21	70	Rio de J'o	S	25	77
Cologne	C	15	59	Rome	F	27	81
Dublin	C	15	59	Singapore	S	30	86
Edinbrgh.	C	15	59	Stockholm	C	13	55
Frankfurt	C	15	59	Strasbrg.	C	14	57
Geneva	C	19	66	Sydney	S	19	66
Glasgow	F	14	57	Tehran	S	26	80
Helsinki	R	10	50	Tel Aviv	S	29	84
H. Kong	S	30	86	Tokyo	C	32	90
Jo'burg	C	20	68	Toronto	S	21	70
Lisbon	F	26	79	Vienna	C	22	72
London	C	18	64	Warsaw	R	15	59
Luxemb'g	C	14	57	Zurich	R	12	54

HOLIDAY RESORTS

		Y'day midday °C	°F			Y'day midday °C	°F
Ajaccio	C	24	75	Jersey	C	17	63
Algiers	S	30	86	Las Plms.	C	24	75
Biarritz	S	22	72	Locarno	C	24	75
Blackpool	C	14	57	Majorca	S	28	82
Bordeaux	S	24	75	Malaga	F	28	82
Boulogne	C	16	61	Malta	S	29	84
Casablnca.	C	24	75	Nairobi	R	23	73
Cape Town	R	14	57	Naples	C	25	77
Corfu	S	28	82	Nice	F	31	88
Dubrovnik	C	24	75	Nicosia	S	28	82
Faro	S	27	81	Oporto	F	21	70
Florence	R	23	73	Rhodes	S	28	82
Funchal	S	24	75	Salzburg	C	13	55
Gibraltar	S	26	79	Tangier	S	30	86
Guernsey	C	16	61	Tenerife	S	30	86
Innsbruck	C	18	64	Tunis	S	30	86
Inverness	C	11	52	Valencia	S	32	90
Isle of Man	F	13	55	Venice	C	22	72
Istanbul	F	26	79				

S—Sunny. F—Fair. C—Cloudy. R—Rain.

هكذا من الاصل

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